



Vol. IV.

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No. 45.

SHOP WINDOWS.

WE have lately been peering into shop-windows in all parts of London in the hope of finding something like a satisfactory display of drugs and chemicals. Our search has been in vain; and we are forced to conclude that such displays are few and far between. What we have seen has not been gratifying, for it has convinced us that there is very little taste or judgment shown by the general body of Chemists in the arrangement and selection of objects for exhibition. Without mincing the matter, we assert that the outward signs of Pharmacy in England are simply contemptible. A litter of sundries, a few stacks of pill-boxes, and a row of bottles containing patent medicines, form, with the indispensable show-bottles, the furniture of many a Chemist's window. Again, in some of the largest establishments, huge glass jars filled with trash and lyngly labelled, are the baits employed to catch customers. Our attention was lately called to one of these jars which ought to have held at least a hundred pounds' worth of sulphate of quinine, according to its barefaced inscription, but which really contained nothing but a lining film of white paint. Surely the honourable craft which we are proud to represent has something better to show to the world than unsightly odds or ends or transparent shams! We do not object to the exhibition of sundries and perfumery, but these things ought not to displace the beautiful products of the laboratory, and the curiosities of the *Materia Medica*.

With a little trouble, and at small expense, a chemist might partially fill his window with fine specimens of crystallized salts, scale-preparations, and other interesting products, together with samples of the more important drugs; these objects, if tastefully arranged and neatly labelled, would be infinitely more attractive than the articles commonly shown. There would still be plenty of room for special goods—such as patent medicines, cosmetics, scent-bottles, and other sundries, if single samples were to be shown instead of stacks and heaps.

We shall return to this subject at a future date, and will then endeavour to give some practical hints respecting the preparation, selection and arrangement of show articles. In the meantime, we shall thankfully receive any suggestions on the subject from subscribers.

VISITS TO CHEMICAL WORKS.

MR. Quin's account of his visit to Messrs. Howards and Sons' great works at Stratford, has been the subject of many flattering letters addressed to us from subscribers, both at home and abroad. We have much pleasure, therefore, in announcing the publication of a series of papers of a similar character, giving particulars of the processes carried on at the principal manufacturing establishments from which the articles sold by our trade are derived. One visit will be described in our next number.

THE PHOTOGENIC GAS COMPANY.

IN our March number we fearlessly exposed the worthlessness of M. Mongruel's Patent Generator introduced by a new company, for increasing the illuminating power of coal gas, and obtaining a useful light from atmospheric air. We were taken to task by some of our contemporaries for our ungenerous attack upon the promoters of the company, but no attempt was made to refute our statements. As the opinion we formed from our own examination was at variance with the wonderful testimonials published by the directors, we were not a little pleased to find, that experience had confirmed our views. The following article from the *Oil Trade Review* will prove that we did right in warning our readers against investing money in shares of the new company :—

"We are under the necessity of again returning to the subject of the projected Photogenic Gas Company, for the purpose of enlightening our readers on the subject of certain errors contained in the circular issued by the promoters. Relying for the moment upon the imposing representation put forward and endorsed by a respectable array of gentlemen's names, we were induced to repeat the statement that the photogenic gas was constantly in use at certain cafés and other establishments in Paris. Since witnessing the experiments at the company's office in Bishopsgate-street, we have had an opportunity of visiting some of the fourteen establishments in Paris, which are particularised by the promoters as being lighted with the photogenic gas, and find that although the proprietors of some of these places were induced to try the effect, they in a very short time abandoned the use of it. At the Café de Bade, Boulevard des Italiens, we were informed that the system was used by a late proprietor, and the new one thinks it did not prove a benefit. The disagreeable odour arising from its use could not be borne, and no saving was effected. M. Delail, of Passage Jouffroy, says that he used the photogenic gas for fifteen days only; he did not think it an advantage to continue it, and considered the odour very disagreeable. At the establishment of M. Hincelin it is still in use; and we think it right to state that he appears perfectly satisfied with it as an *improver* of the ordinary gas (strong light being required upon the premises). M. Hincelin has no belief in the economy of the application, his only object being to obtain an improved light. These facts may be taken as a specimen of the replies met with at most of the establishments mentioned in the Company's prospectus. We are not in possession of any information from the 'forty or forty-five provincial towns of France,' in which towns, we are informed by the prospectus, the patent is in extensive use; but we feel ourselves called upon, from the many inquiries we have received upon the subject, to acquaint our readers with the result of our investigations, that they may learn to receive with some degree of caution the statements put forward in the programmes of newly-projected undertakings."

ALBUMINATE OF IRON AND SODA.

BY BARNARD S. PROCTOR.

IN the *Chemical News* of March 28th, we have an article with the above heading, quoted from the *Journal of Rational Medicine*, in which the writer, Angellico Fabbri, advocates the use of a combination of oxide of iron, caustic soda, and albumen, as a new therapeutic agent.

It is with anything but merciful feelings that pharmacutists generally regard those who introduce new preparations of iron, especially such as are of a complicated, indefinite,

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or unstable nature. "That the official preparations (of iron) are unnecessarily numerous, no one can doubt," said Professor Christison twenty years ago; and yet they have gone on multiplying ever since, frequently indicating the folly rather than the wisdom of their introducers. Ten years later, Beasley's Formulary gives about 150 preparations of iron for medicinal use. Under the head of "Ferri" there are 49 preparations, various of which have several formula; under "Syr. Ferri," 25 preparations; under "Pil. Ferri," 22; "Tr. Ferri," 11; "Sol. Ferri," 9; "Liq. Ferri," 8; "Ung. Ferri," 7; and various formulæ for Vin. F., Troch. F., Sacchar. F., Conf. F., Elect. F., Aq. F., Pulv. F., Ext. F., Mist. F., besides such extempore preparations as draughts, enemata, and injections. It would be difficult to estimate the number of additions to this list which have taken place during the last ten years; the phosphorus mania and the granulation mania, being contagious, have spread the evil at a greatly increased rate, and it becomes the duty of those who would promote science and system in medicine and pharmacy to expose the folly of new additions to the list and check the growth of the nuisance.

The article which I am now about to criticise is recommended by Fabbri because he fancies the iron in it is in a state of combination similar to that in which it exists in the blood, and consequently, he seems to think, is more likely to be assimilated. I do not mean to discuss the probability or improbability of such a doctrine; but supposing it to be rational, the Syr. Ferri Albuminatis of Lassaigne (see Beasley's Formulary) was already in the field, and with the advantage of being more definite in composition: that it has not possessed any decided advantages over other modes of administering iron, we may conclude from the oblivion in which it lies. I might have been satisfied to dismiss the subject with this simple statement, were it not that the writer with whom we are now dealing is one of a class who injure science by sailing under false colours; giving to uncertain mixtures names which imply definite chemical compounds, and assuming an outward appearance of philosophy which is wanting in truth.

The instructions are as follows:—"In preparing the albuminate of iron and soda, I employed the following process:—Take 112 grains of caustic soda, and 104 of sulphate of iron. Having dissolved both in a sufficient quantity of distilled water, let the solutions be poured on the whites of four eggs previously beaten up; let all now be shaken together and poured upon a filter to separate the hydrated oxide of iron which has precipitated, since all the iron is not in this case converted into albuminate. To the filtered liquid, which now contains, in addition to the albuminate, sulphate of soda, formed by the decomposition of sulphate of iron by the soda present in excess, lime-water is to be added, to decompose the sulphate of soda, by which an insoluble sulphate of lime is precipitated. To separate the latter, the mixture is to be again filtered; and as the filtered fluid will contain an excess of lime, it is to be subjected to the action of a stream of carbonic acid, care being taken to avoid using an excess of the latter, and again filter to get rid of the insoluble carbonate of lime thus formed. The filtered fluid is now to be allowed to evaporate in a wide, shallow vessel, and with the aid of the heat of a stove, until it is reduced to a pint." . . . "Each ounce of this liquid contains, approximately, four grains of the albuminate, *plus* an excess of albumen and soda." Here is an attempt at the appearance of uniformity in the strength of the liquor; but, however accurately the pint may be obtained, the four eggs will yield various quantities of albumen; and if the iron in solution depends upon the albumen, we will have it also varying, more or less being rejected by the first filtration. By sulphate of iron, we suppose protosulphate is intended: oxygen, however, will be absorbed, and that to an uncertain degree, during the many processes through which it is put, thus causing a farther variation in the strength or properties of the resulting liquor.

We are then told that the liquor contains sulphate of soda, "formed by the decomposition of sulphate of iron by the soda present in excess:" a chemist would have known that it was not the soda in excess, but that which was in equivalent proportion, which had formed the sulphate. Then he adds lime-water to decompose the sulphate of soda: a chemist would have known that lime-water does not decompose sulphate of soda. But he gets a precipitate, which, in all probability without any examination, he concludes is

sulphate of lime. The precipitate is accounted for by a little carbonate which is always present in caustic soda, and which, if not present at first, would be formed by the unavoidable contact of air during filtration, &c. The stream of carbonic acid which is next directed to be used looks like an attempt at great precision; but if there be not added more lime-water than enough to decompose the carbonate of soda present, there is no need of lime-water at all. But it is much more difficult to regulate the stream of carbonic acid than the additions of lime-water, and the probability is that too much of it also may be added; thus restoring the liquor to the condition it was in before the addition of lime-water, except that there is now a large bulk of water, which we are directed to get rid of by evaporation. If by good fortune the exact equivalent of carbonic acid has been added, more is sure to be absorbed during filtration, evaporation, and keeping.

The writer speaks of the resulting compound as a soluble salt, "the chemical combination of which is so powerful that it is not destroyed by the most delicate reagent." He seems to labour under the mistaken idea that a delicate reagent must be a powerful means of effecting decomposition. The reagent he speaks of is "ferro-cyanide of potassium, the most delicate test for the salts of iron." He does not seem to be aware that it is not a test for iron at all when free alkali is present, and that the blue precipitate, if formed, would be immediately decomposed by the caustic soda which his liquor contains. He seems to be under the impression that this state of combination of iron is peculiar to its union with albumen. Chemists are well aware that non-volatile organic matters generally have the same power of preventing the precipitation of iron; that sugar, gum, or tartaric acid would have given similar results; that the ammonio-citrate of iron and similar salts are not precipitated by ferro-cyanide of potassium.

He says each ounce of the liquor contains about four grains of albuminate. If he means a quantity of albuminate equal to four grains of sulphate of iron, the statement appears very questionable; but if he means precisely what he says, we have to ask what quantity of iron four grains of albuminate of iron and soda contain? According to Lieberkuhn's formula ($\text{FeO}, \text{NaO}_1 \text{C}_{144} \text{H}_{110} \text{N}_{18} \text{S}_3 \text{O}_{42} 2\text{Aq}$), four grains of albuminate would contain $\frac{1}{100}$ of a grain of protoxide of iron—a quantity not likely to be of any value.

He says, it "may be obtained in radiated crystals by evaporating the solution to dryness." If this were the case, the crystals might be expected to have a definite composition, and they only should be used for medicinal purposes. But on evaporating the liquor there is left an amorphous tough brown substance (containing, doubtlessly, the albumen and peroxide of iron), mixed with white crystals consisting of sulphate and carbonate of soda.

Physicians and Pharmacutists may well look with suspicion upon new preparations of iron when such a sample as the present is brought to light.

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ALKALIMETRY.

BY PROFESSOR SAMUEL W. JOHNSON, M.A.*

In the Sheffield Laboratory of Yale College, New Haven, U.S., the following method of conducting nice alkalimetical analyses is employed, which combines several of the most recent improvements in a manner that unites great convenience with the highest accuracy. The requisites are, besides the usual graduated apparatus, a standard acid, a standard alkali, an indicator of the point of neutralization, and pure carbonate of soda.

The standard acid.—The use of crystallized oxalic acid, as suggested by Mohr, has come into general favour, and nothing can be more satisfactory when the acid is pure and

* From Silliman's *American Journal of Science* for March, 1863. To estimate the value of a sample of commercial soda, potash, or other alkaline substance, by determining the amount of real alkali, is one of the commonest tasks of the analytical chemist. Knowing that many of our subscribers undertake analyses, we conclude that Professor Johnson's account of the alkalimetical method adopted in the laboratory over which he presides will not be out of place in these pages.—Ed.

of constant composition. It is, however, difficult not only to procure a pure acid, but also to preserve it dry without loss of crystal-water. To dry the pulverized acid over oil-of-vitriol until it ceases to lose weight, as proposed by Erdmann, or to select uneffloresced crystals by help of a magnifier, is troublesome and likely to introduce error. We employ a dilute sulphuric acid, which may be made of convenient strength for ordinary use, by diluting ten cubic centimetres of oil-of-vitriol with water to the volume of a litre.*

The standard alkali is made from commercial caustic potash: this is dissolved in water and diluted until a given volume,—e.g., 5 c. c.—neutralizes 4 to 5 c. c. of the standard acid, as is determined by a few rough trials.

The alkali-solution thus obtained is heated to boiling in a flask, and a little freshly-slaked lime is added to decompose any carbonate of potash. The boiling is continued a few minutes, and, finally, the ley is poured upon a filter, and the filtrate is collected in the bottle from which it is to be used. Care should be taken to bring upon the filter some of the excess of lime that is suspended in the liquid, so that the latter may acquire no carbonic acid from the air. The clear liquid thus obtained is a potash-lye containing lime in solution. If exposed to the air, the carbonic acid that is absorbed separates as carbonate of lime, leaving the liquid perfectly caustic.

It now remains to determine with the greatest accuracy, first, the volume of alkali which neutralizes a cubic centimetre of the acid; and secondly, the amount of SO_3 contained in a cubic centimetre of the latter.

As a means of recognizing the point of neutralization, tincture of cochineal possesses great advantages over solution of litmus. The knowledge of this fact is due to Luckow, who has detailed its application in *Jour. für Prakt. Chem.*, lxxxiv., p. 424. Tincture of cochineal is prepared by digesting and frequently agitating three grammes of pulverized cochineal in a mixture of 50 cubic centimetres of strong alcohol with 200 c. c. of distilled water at ordinary temperatures for a day or two. The solution is decanted, or filtered through Swedish paper.

The tincture thus prepared has a deep ruby-red colour. On gradually diluting with pure water (free from ammonia), the colour becomes orange and finally yellowish-orange. Alkalies and alkali-earths, as well as their carbonates, change the colour to a carmine or violet carmine. Solutions of strong acid and acid salts make it orange or yellowish-orange.

To determine the volumetric relation of the alkali and acid, a given volume of the latter—e.g., 20 c. c.—is measured off into a wide-mouthed flask, ten drops of cochineal-tincture and about 150 c. c. of water are added; the alkali is now allowed to flow in from a burette, until the yellowish liquid in the flask, suddenly, and by a single drop, acquires a violet-carmine tinge.

In nicer determinations, it is important to bring the liquid each time to a given volume, by adding water after the neutralization is nearly finished. For this purpose, two or more flasks of equal capacity are selected, and on the outside of each a strip of paper is gummed to indicate the level of the proper amount of liquid,—e.g., 200 c. c. The same amount of colouring matter being thus always diffused in the same volume of the same water, the errors of varying dilution and varying amount of ammonia (which is rarely absent from distilled water) are avoided. The contents of one flask, in which the neutralization has been satisfactorily effected, may be kept as a standard of colour for the succeeding trials, as the tint remains constant for hours, being unaffected by the absorption of carbonic acid. The greatest convenience and accuracy of measurement are attained by using burettes provided with Erdmann's swimmer (*Jour. Prakt. Chem.*, lxxi., p. 194).

When three or four accordant results have been obtained, the average is taken as expressing the relative strength of the acid and alkali.

† For the information of those who are not familiar with the decimal system of weights and measures, we give the following table:—

1 Decigramme	=	1.543 grains,	or about	1½ grains.
1 Gramme	=	15.432	"	15 2-5ths "
1 Cubic centimetre	=	.061 cubic inches	"	6-100ths cub. inch.
1 Litre	=	61.027	"	1¼ pint.

To ascertain the absolute standard, weigh off in a small platinum crucible about 0.8 gm. of pure carbonate of soda, ignite to dull redness, cool and weigh accurately; bring the crucible with its contents into one of the wide-mouthed flasks, and let flow from the burette a slight excess, *e.g.*, 50 c. c.—of standard acid. The solution of the carbonate of soda is facilitated by warming, and, finally, the contents of the flask are gently boiled for several minutes to expel carbonic acid. The solution is now allowed to become *perfectly cold*; then add ten drops of cochineal, and, lastly, the standard alkali to neutralization, diluting to the proper volume.

To illustrate the accuracy of the process and the calculations employed, the following actual data may be useful. The normal acid was made by diluting 50 c. c. of oil-of-vitriol to the volume of ten litres, and had half the strength above recommended. The alkali was from a stock on hand, and more dilute than necessary.

RELATION OF ACID TO ALKALI.

Exp. I.	20 c. c. $\text{SO}_3 = 32.8$ c. c. KO, or 1 : 1.64
Exp. II.	20 c. c. $\text{SO}_3 = 32.8$ c. c. KO, or 1 : 1.64
Exp. III.	40 c. c. $\text{SO}_3 = 65.7$ c. c. KO, or 1 : 1.6425

We have accordingly :

$$1 \text{ c. c. } \text{SO}_3 = 1.64 \text{ c. c. KO and } 1 \text{ c. c. KO} = 0.60976 \text{ c. c. } \text{SO}_3.$$

ABSOLUTE STRENGTH OF ACID AND ALKALI.

Exp. I. 0.4177 grm. of carbonate of soda were treated with 44.2 c. c. of SO_3 . To neutralize the excess of the acid were required 3.8 c. c. KO, which correspond to 2.32 c. c. SO_3 (3.8×0.60976). Deducting this from the total amount of acid ($44.2 - 2.32$), we have 41.88 c. c. of acid, equivalent to the carbonate of soda taken.

$$41.88 \text{ c. c. solution of } \text{SO}_3 = 0.4197 \text{ grm. NaO CO}_2.$$

Exp. II. 0.4126 grm. NaO CO_2 treated with 44 c. c. SO_3 required 4.28 c. c. KO. $4.28 \times 0.60976 = 2.61$ c. c. SO_3 . $44 - 2.61 = 41.39$ c. c. SO_3 .

$$41.39 \text{ c. c. solution of } \text{SO}_3 = 0.4126 \text{ grms. NaO CO}_2.$$

It is convenient to calculate how much acid corresponds to 53 decigrammes of carbonate of soda, since the relation of any other substance to the acid is then obtained by substituting its equivalent number for 53 (the equivalent of NaO CO_2), thus :

grms. NaO CO_2		c. c. SO_3
I. 0.4177 : 0.53	::	41.88 : 53.14
II. 0.4126 : 0.53	::	41.39 : 53.17

Accordingly 0.53 grm. NaO CO_2 neutralize 53.155 c. c. SO_3 .

If the solutions are employed for nitrogen estimations, we learn how much nitrogen corresponds to 1 c. c. of acid, by the following proportion :—

c. c. SO_3		grm. N.
53.155 : 1	::	0.140 : 0.0026338

We may then write on the label of the acid bottle the following data for circulation :—

1 c. c. KO	=	0.60976 c. c. SO_3 .
1 c. c. SO_3	=	1.64 c. c. KO.
1 c. c. SO_3	=	0.0026338 grm. N.

As an example of the determination of nitrogen by help of these solutions, the following analysis of hippuric acid, made by Mr. Peter Collier in this Laboratory, may be adduced :—

0.3923 grms. hippuric acid were burned with soda-lime, and the ammoniacal products were collected in 20 c. c. of the standard acid contained in the usually-employed bulb tube. When the combustion was complete, the contents of the bulbs were rinsed out into a flask, brought to the volume of 150 c. c., and, after adding 10 drops of cochineal,

the normal alkali was dropped in, until the change of colour indicated neutralization; 13.7 c. c. of KO were required, = 8.354 c. c. SO_2 (13.7×0.60976), which deducted from 20 c. c. left 11.646 SO_2 as equivalent to the nitrogen of the hippuric acid. $11.646 \times 0.0026338 = 0.0306732 \text{ N.} \div 0.3923 = 7.818$ per cent. The calculated percentage is 7.82.

The advantages of cochineal over litmus as an indicator are as follows:—1. It possesses far greater sensibility. Luckow asserts that water which is tinged faintly orange by it, becomes distinctly red by the addition of $\frac{1}{200,000}$ th of ammonia or $\frac{1}{1,130,000}$ th of carbonate of lime.

When a little pulverized marble is covered with the diluted tincture and allowed to stand for some time, the lower stratum of liquid acquires a carmine tinge, and by shaking, the whole solution becomes red. Luckow considers that in this case the carminic acid attacks the marble and forms a lime salt which causes the change of colour. In this way the minutest traces of carbonates of alkali-earths may be detected in pulverized minerals, clays, &c. Alkali-salts must of course be removed by washing with distilled water free from ammonia.

This extreme delicacy allows of the use of much more dilute solutions than can be employed with litmus.

2. According to Luckow, cochineal is quite indifferent to carbonic and sulphydric acids, carminic acid being stronger than these. This is practically true for solutions of considerable strength. Hence a normal alkali for technical analysis may be prepared by simply dissolving a weighed amount of carbonate of soda in a known volume of water, and from this a standard acid may be easily made. In the neutralization it is not needful to expel carbonic acid by boiling. The influence of the latter is, however, at once seen when a caustic and carbonated alkali are operated with side by side. In case of the former, the point of neutralization (or rather of supersaturation) is shown by a prompt and decisive change from that in which orange predominates, to one in which this disappears and violet is most marked. In presence of carbonic acid the change is somewhat gradual, and though a red colour is produced it is modified by an orange tint, even in presence of a large excess of alkali. Hence, it is to be recommended, especially in nice investigations, to employ a caustic alkali. A trifle less of it will be found needful to neutralize a given volume of acid than is required of a carbonated solution, and no doubt will exist as to the point of saturation. Mr. Collier has made some experiments with a sulphuric acid containing 25 c. c. oil-of-vitriol to the litre and a solution of carbonate of soda; and he found, when CO_2 was expelled by boiling, that 10 c. c. $\text{SO}_2 = 7.66$ and 7.67 c. c. of NaO CO_2 ; when CO_2 was not expelled, 10 c. c. $\text{SO}_2 = 7.68$ and 7.7 . These results are as good as identical. In standarding the much weaker acid used for the nitrogen determination above mentioned, he obtained for it a value slightly too low when CO_2 was not removed. 0.53 grm. NaO CO_2 required in this case but 53.05 c. c. SO_2 , instead of 53.155 as in the other instances. This is a very slight difference, and not appreciable perhaps with ordinary burettes; but it is a constant and perceptible difference. What is of more importance is the uncertainty as to the point of neutralization.

This indifference towards carbonic acid is a great advantage in nice analyses, in that the time consumed for effecting neutralization is without influence on the result. When litmus is used and the point of neutralization is reached, a short exposure to the air suffices to redden the liquid again. If the operator is obliged to proceed slowly, he will require somewhat more alkali than when he operates rapidly; a portion of it being neutralized by atmospheric carbonic acid. With cochineal, the result is independent of the small amount of carbonic acid that can come from the air. The permanence of the colour also allows several titrations to be compared directly together.

A third advantage of cochineal is, that its solution, prepared as above described, may be preserved indefinitely in closed vessels, without decolorization or alteration.

THE NEW OILS.

As many of our country subscribers now deal largely in burning oils we shall occasionally devote a portion of our space to brief notices of the more interesting samples, which are sent to us for examination or procured by purchase. An experienced chemist has the sole management of the investigations upon which our reports will be based. We are quite sure that he will treat each sample entirely on its merits, stating the full truth in every case, and that he will expose without mercy those unprincipled and ignorant dealers who endeavour to palm upon the trade oils of an inferior and dangerous character, calculated to cause disastrous accidents, which might be avoided by a careful use of oils of the proper standard. We need not inform our readers who are necessarily familiar with the difficulties of chemical manipulation, that the determination of the temperature at which a sample of oil gives off an inflammable vapour is an operation of considerable nicety and trouble. Moreover, it is one which few chemists would care to perform for themselves; yet upon its accurate determination depends the knowledge of the relative degree of inflammability, and, consequently, of danger or safety in the oil. Hence we are, by undertaking this task, performing, as we conceive, an important service to our subscribers. Samples of the oil so tested will be bottled and kept for future reference. We may here state once for all that our spirited weekly contemporary, *The Grocer*, shares with us the advantages of having this scientific and experienced reporter. The *Oil Trades' Review*, issued once a month to the subscribers of that journal, will therefore contain reports similar to those found in these pages. Since the publication of the notices in our February number, which we have reason to know gave great satisfaction, the following oils have been examined. It will be seen that there is a manifest improvement in the samples as now manufactured, the extensive employment of the more volatile and inflammable portions, as mineral turps, and also as a means of naphthalizing coal-gas, and so increasing its illuminating power, has led to their profitable application, and so removed the temptation which formerly existed to allow them to remain in the oils sold for lamps.

AMERICAN CRYSTAL OIL.

PURCHASED OF BATTY AND CO., FINSBURY PAVEMENT.

This is a perfectly colourless, limpid oil, having a specific gravity of $\cdot 810$; its odour is very slight, and not in the least unpleasant. The temperature at which the vapour takes fire is 160° Fahr.

The oil burns with a pure white light without smoke, and from its limpidity, purity, and high inflaming point, may be described as belonging to the best class of oils in the market.

THE NEW VICTORIA OIL, FIRST QUALITY.

JAMES MADDEN, 3, LEADENHALL-STREET.

This is a nearly colourless oil, having a very slight, not unpleasant odour, and thin, limpid character. Its specific gravity is $\cdot 808$, and its inflaming point 135° Fahr. The illuminating power is good, as it rises freely and burns with a clear white light. It may be described as a thoroughly good, safe oil.

THE NEW VICTORIA OIL, SECOND QUALITY.

JAMES MADDEN, 3, LEADENHALL-STREET.

This is a cheaper oil issued by the same firm; its colour and odour are both much more decided than in the last-named sample. Its specific gravity is $\cdot 810$, and its inflaming point is 120° Fahr. The flame is not quite as pure as the more expensive oil, but it may be described as a good, safe, cheap oil.

YOUNG'S PARAFFIN OIL.

PURCHASED AT 29, OXFORD-STREET.

This is an oil of the colour of ordinary sherry, of a fair degree of limpidity, and a

decided, but not unpleasant odour. Its specific gravity is $\cdot 825$, being considerably heavier than the other samples under notice. Its inflaming point is 140° Fahr., so that it is a very safe oil; its illuminating power is inferior, the flame being brown at the upper part, smoking unless kept low, and with the most careful management rendering the chimney brown and dingy in the course of three hours' burning.

CRYSTAL CARBON OIL.

MESSRS. GILBERT AND GIBSON, 14A, CANNON-STREET, E.C.

Since our last published examination of the Crystal Carbon Oil issued by this firm, it has been much improved. The sample we have just examined presents the following characters:—It is perfectly colourless, very limpid, with a very slight smell, which is not at all unpleasant. It possesses a very good illuminating power, burning with a pure white flame free from smoke. Its specific gravity is $\cdot 790$ and the temperature at which it inflames is 126° Fahrenheit. It may be characterized as a good safe oil of very superior quality.

PRICE'S BELMONTINE.

PRICE'S PATENT CANDLE COMPANY, BELMONT, VAUXHALL.

This is a colourless, fragrant oil, prepared by distilling Rangoon Tar, or Mineral Petroleum. Its specific gravity is $\cdot 847$; but although so heavy, it is remarkably limpid, being altogether free from viscosity, hence it rises freely and rapidly through a long wick. Its inflaming point is 134° Fahrenheit. It burns with an exceedingly clear white light, and possesses a very high illuminating power. Belmontine is one of the best oils in the market.

HAWKINS'S PREPARED CRYSTAL OIL.

A perfectly colourless, limpid oil, with a slight fragrant odour, not in the least unpleasant. Its specific gravity is $\cdot 801$, its inflaming point 130° Fahrenheit. It rises freely, being a perfectly limpid oil, and burns with a clear white flame. It may be described as a very safe oil, of superior quality.

WHITMORE AND CRADDOCK'S MACHINERY OILS.

MESSRS. WHITMORE AND CRADDOCK have forwarded to us samples of the machinery oils sold by their firm.

A.—SHAFTING OIL.

This is an excellent bearing oil for heavy machinery: it possesses a good body, resists any amount of natural cold, even as low as zero Fahrenheit, or 32° below freezing, without becoming thicker, or throwing down any insoluble precipitate. It is said to have no action on any of the ordinary metals, even when they are submitted to its influence for a lengthened period of time. It is destitute of the slightest acid reaction; hence it possesses no corrosive influence on bearings, whether they are constructed of steel, brass, or gun metal. From its want of volatility even at high temperatures, it does not dry off or become gummy.

B.—SPINDLE OIL.

This is an admirable oil for spindles or rapid machinery, being thin and very liquid, and working very clean; like the last, it is perfectly free from the slightest trace of acidity. It may be heated to upwards of 300° Fahrenheit without giving off inflammable vapour; and when evaporated at a higher temperature, it does not leave any sticky residue. It is a very superior article to the ordinary oils in common use.

C.—LUBRICATING OIL.

This oil is intermediate in quality to the others just described, possessing more body than the one, and less than the other; hence it is well adapted for ordinary machinery, such as printing-presses, agricultural steam-engines, and engineering work in general.

SPERM OIL.

MESSRS. WHITMORE AND CRADDOCK.

This oil is adapted for those purposes where a fat oil is required. It is one of the best and purest samples that have come under our notice, being peculiarly free from all extraneous substances and also from gumminess.

We are fully aware of the dislike that engineers having control of intricate machinery have to try any new oils, in consequence of the trouble and expense occasioned by the necessity of its removing by cleaning, if found not to fulfil the conditions required; nevertheless we can recommend a trial of these oils, as they appear to answer admirably the purposes for which they are designed.



Many of the notices which follow are based upon articles which appear in the March number of the *American Journal of Pharmacy*.

FLUID EXTRACT OF COCCULUS INDICUS.—EXTRACTUM COCCULI FLUIDUM.

Professor William Proctor, of Philadelphia, being called upon to prepare this extract with a view to its use for the destruction of personal vermin, adopted the following formula:—

Take of *Cocculus Indicus*, sixteen ounces, troy.

Alcohol and water, of each a sufficient quantity.

Bruise and sift the *cocculus*, using a No. 40 sieve, until the kernels have passed the sieve and the capsules have been well broken up. Moisten the powder with six ounces of a mixture of two parts of alcohol and one of water, and after standing two hours pack it in a conical percolator, and pour on the same menstruum until twelve fluid ounces have passed. Digest the capsules in two pints of diluted alcohol for several hours at 130°; and after cooling, pour the whole into the percolator on the kernels. When the liquid disappears, pour on diluted alcohol until two pints more of percolate is obtained. Evaporate this to four fluid ounces, mix it with the reserved tincture, and after standing twenty-four hours, filter through paper.

FLUID EXTRACT OF COCHINEAL.—EXTRACTUM COCCI FLUIDUM.

This preparation is suggested by the same writer, merely for the convenience of the pharmacist for dispensing in prescriptions, or as a colouring agent. The common cochineal mixture of ten grains of cochineal and twenty grains of carbonate of potassa, which at seasons is so frequently called for, may be made extemporaneously, by putting the carbonate into the vial with the water, and adding twenty minims of the fluid extract. To guard it against decomposition, the fluid extract is made partly alcoholic.

Take of *Cochineal*, four ounces, troy.

Diluted alcohol, a sufficient quantity.

Powder the cochineal to the fineness of a sieve of fifty meshes per inch, mix it with its bulk of fine sand, moisten it with half a fluid ounce of diluted alcohol, press it slightly in a funnel prepared for percolation, and pour on diluted alcohol so that it shall slowly pass. Reserve the first five fluid ounces, and continue the percolation until a pint more of tincture is obtained. Evaporate this at a temperature below 130° on a water bath, in a porcelain dish, to three fluid ounces. Lastly, mix it with the reserved tincture and strain if necessary. Each minim represents half a grain of cochineal.

LARD FOR PHARMACEUTICAL PURPOSES.

In the preparation of lard for pharmaceutical purposes, the crude fat should be carefully separated from the membranes and pieces of flesh, cut in small pieces, and then malaxated in repeated portions of cold water until this remains clear, when it should be tried in a tinned vessel with a moderated heat, until the melted fat, which at first is milky from the presence of water, becomes perfectly clear and anhydrous. It should then be strained into earthen pots, stirred occasionally till it chills (but not so as to incorporate any air with it), to prevent granulations of a stearic nature from forming. The pots should then be securely covered (waxed or varnished paper will be suitable), and kept in a dry, cool cellar. Veal, beef, and mutton suet should be prepared in the same manner.

Benzoinated and Populinated Lard.—However carefully prepared, lard tends to get rancid by age and exposure. In 1843 and 1849, M. Deschamps broached the idea of its being protected by certain balsamic resins, and suggested *benzoinated* and *populinated* as prefixes, denoting that the lard had been digested with benzoin and poplar buds. Professor Proctor states that he has tried both of these means of retarding the oxidation of fat, and finds the latter far superior in its power for this purpose. In 1851 a sample of red oxide of mercury ointment was prepared with poplar-bud ointment (from buds of *Populus balsamea*) and presented to the class of the Philadelphia College of Pharmacy, and the specimen still continues free from any visible evidence of deoxidized mercury, and retains its peculiar odour, though twelve years have elapsed. The objection to this agent is that it colours lard and ointments orange yellow. It has been used advantageously in mezereum and other coloured ointments, and for beef marrow, which it odorizes. *Balsam of Peru* incorporated or heated with lard possesses the same quality.

Balsamic Lard.—The report on cerates and ointments by MM. Vuaffart, Durozier, and Comar, published in the *Jour. de Pharm. et de Chimie* of November last, contains the following formula :—

Take of Lard, newly rendered, 1,000 grammes.

Balsam of Tolu, 10 „

Mix them and liquify the lard in an earthen vessel by aid of a water bath, digest for some time and strain through muslin. The lard should be stirred during the cooling to prevent granulation. Balsamic lard as thus prepared is perfectly white and of an agreeable tolu odour. The reporters recommend in making *mercurial ointment* to employ 460 parts of balsamic lard and sixty parts of wax melted together as the vehicle for 500 parts of mercury; using the fatty matter in a semi-fluid state by agitation, a plan of proceeding well known in this country, and used by Mr. Coppuck and Dr. Squibb. Thus made, mercurial ointment is free from rancidity and of an agreeable odour. The authors recommend balsamic lard as a vehicle for narcotic ointments, from extracts; and for those of sulphur, the iodides of lead, and of mercury, and of tartar emetic.

ELEMII IN OINTMENTS.—FORMULÆ OF PHARM. L. AND D.

The resinous matter of elemi, or at least one of its resins, is peculiar in its relations to the oils and fats, and is often the occasion of difficulty. In making the unguentum elemi of the London Pharmacopœia, the elemi and turpentine should be first liquified by heat and strained if necessary, and then the suet and oil previously melted is incorporated by active stirring. The tendency is for a portion of resin to be precipitated by the fats and become unmanageable. The Dublin Pharmacopœia requires four ounces of elemi fused to be incorporated by fusion with sixteen ounces of white wax ointment.

Recently the following prescription was dispensed by Professor Proctor :—

Take of Tolu, two drachms,	troy.
Elemi, half an ounce,	„
White Wax, an ounce,	„
Lard, an ounce and a half,	„
Powdered Camphor, six drachms,	„
	Mix.

No directions were given for the preparation. The tolu and elemi were first softened by

heat, the camphor then added, which soon formed a liquid mixture; the wax was then added, which also incorporated with the others; but when the lard was finally added, a portion of the resinous matter was precipitated, amounting to one-sixth of the whole, which refused to unite with the fluid portion. The latter on straining formed an elegant ointment.

PREPARATION OF MOUCHON'S COLOCYNTHIN.

Professor Procter having had occasion to prepare some of the so-called *colocynthin*, has employed the following recipe and manipulation with excellent results:—

Take of Colocynth Pulp (deprived of the seeds), thirty-two ounces.

Animal Charcoal (of good quality, unpurified), thirty-two ounces.

Alcohol sp. gr. 835, a sufficient quantity.

Dry the pulp at a moderate temperature until friable, and reduce it to powder by passing through a No. 40 sieve. The animal charcoal should also be in powder of the same fineness. Close the neck of a two-gallon glass funnel with a fluted cork, and some cotton or wool lint; then, a layer of sand of half an inch; on this, four ounces of the charcoal; and, lastly, the colocynth powder intimately mixed with the charcoal, packed firmly; the whole covered with muslin and a layer of sand. Alcohol is now poured on, and if the materials have been properly packed its passage will be sufficiently slow; but if too loose, the rapidity of the percolation must be regulated by means of a cork so that it will pass by drops. A bright yellow concentrated tincture is obtained, which should amount in all to five or six pints. If convenient to regain a portion of the alcohol, it may be effected in a well-tinned still or glass retort by aid of a water bath; but the product is lighter coloured when the evaporation is conducted at a temperature not exceeding 130° F: to dryness, or until a soft resinoid mass is obtained, which can be pulled like candy. This after exposure in layers acquires a friable consistence, and is finished. About seven ounces were obtained from thirty-two ounces of the best French pulp, or about six per cent. of the crude drug. Dose, from half a grain to two grains.

GLYCERINATED EXTRACTS.—BELLADONNA FOR THE BREAST OR TUMOURS.

The following hints by Mr. T. S. Wiegand are valuable:—The difficulty of incorporating extracts in ointments, syrups, and mixtures generally, has been one that many of us have frequently experienced. The most simple and unobjectionable method I have yet seen is to work up any given extract with an equal weight of pure glycerine, added gradually during the process of mixing it. This obviates the trouble of mixing the extract in any one of the many ways which in extracts are now so commonly employed. It is an excellent manner in which to exhibit belladonna when required to be applied to the breast or to tumours, and the facility with which it can be washed off is a very great advantage over the ointment which is so commonly directed. Of course, double the weight of the extract prescribed must be used when thus prepared.

PREVENTION OF PITTING IN SMALL-POX.

The following article is extracted from the columns of the *Scotsman*:—"We lately referred to the prevalence of small-pox in London, and congratulated our citizens on the almost complete disappearance of the epidemic. Not only in London, however, but in several other places in England and Scotland is this loathsome disease at present prevalent; and, in spite of vaccination, deaths have been very numerous, and sad disfigurement to the face common. While vaccination is generally regarded as the grand preventive of the former result, and all but universally practised, it has long been felt that medical men would confer a great boon on society if they could discover some means by which the latter and less grave result could be prevented. We believe that, by a very simple application, this desirable end has been attained in the clinical wards in the Royal Infirmary; and it is in the hope that when known it may be generally practised that we at present draw attention to it. The application consists of a solution of india-rubber in chloroform, which is painted over the face (and neck in women) when the eruption has become fully developed. When the chloroform has evaporated, which it very readily does, there is left a thin elastic film of india-rubber over the face. This

the patient feels to be rather comfortable than otherwise, inasmuch as the disagreeable itchiness, so generally complained of, is almost entirely removed, and, what is more important, 'pitting,' once so common, and even now far from rare, is thoroughly prevented wherever the solution has been applied. It may be as well to state that india-rubber is far from being very soluble in chloroform; so that, in making the solution, the india-rubber must be cut into small pieces, and chloroform added till it is dissolved. The medical gentleman who has introduced this treatment has tried several other substances, but found none so generally useful. For instance, gutta-percha was tried. It has the advantage of being very soluble in chloroform, and would have been a very admirable application but for the tendency it has to tear into ribands whenever the mouth is used, or even when the features play. India-rubber, on the other hand, is pliable and elastic, allowing free use of the mouth without any danger (as a rule) of its tearing off. If, however, from some cause or other, a portion is torn off, a fresh application of the solution by means of a large hair-pencil remedies the defect, and the mask is once more complete. Several patients who have had this india-rubber mask applied concur in stating that they found it agreeable to wear, and their faces were perfectly free from 'pitting,' although other parts of the body, such as the arms, were covered. The credit of this valuable invention and application belongs to Dr. Smart, house physician, clinical wards, Royal Infirmary; and, while he no doubt in the proper quarter will make good his claim to the honour, he will feel amply repaid by its general adoption by his medical brethren, and the consciousness that he has done something to increase the resources of the medical art."

SHEEP KILLED BY SULPHATE OF IRON.

A curious case of poisoning, by which a flock of sheep was destroyed, has been communicated to the Central Society of Agriculture of France. Sulphuric acid is used in the maceration of the pulp of beetroot, but a farmer who fed his sheep with that vegetable thought fit to add 4 litres of sulphuric acid and 1,800 grammes of sulphate of iron to every 1,000 kilogrammes of beetroot. The sheep who ate of the pulp thus prepared shortly became sick, and many of them died. On being opened by a veterinary surgeon, strong traces of violent inflammation were visible, and the entrails having been subjected to a chemical analysis, it was ascertained that death was caused by the presence of sulphate of iron in the pulp. No doubt could be entertained on the subject, as other sheep, fed on beetroot pulp to which no sulphate of iron was applied, continued to be perfectly healthy. It is believed in some agricultural districts that sulphate of iron acts more powerfully on sheep than on oxen. The veterinary surgeon who was employed to examine the sheep poisoned observed in the same farm that cows had eaten with impunity of the same beetroot pulp which had poisoned the sheep.

THE UPAS POISON.—A DANGEROUS EXPERIMENT.

The upas tree of Java, known to botanists as the *Upas antiar* or *Antiaris toxicaria*, produces a milky juice with which weapons are poisoned. The poisonous principle is called *antiarin*, and contains $C_{14}H_{10}O_5$. It forms small pearly crystals soluble in 27 parts of boiling water, and also in alcohol, but scarcely so in ether. Introduced in a wound, it rapidly brings on vomiting, convulsions, and death. The *Abeille Médicale* states that a short time ago a scientific gentleman at Berlin received a small quantity of the condensed juice of the upas, and resolved to try the effects of it upon himself. One afternoon he accordingly took three grains of this drug, which he found very bitter and rather saltish. Immediately afterwards he felt extremely gay, and a bad headache which he had at the time disappeared; but after a while he experienced a sensation of oppression in the stomach. Nevertheless, he had the imprudence to go out: on turning a corner he became aware of a considerable stiffness along the spine; this was about half an hour after having taken the poison. An hour later, while taking a cup of coffee, he felt a violent shock throughout his body and stiffness at the extremities; at the same time his head was thrown backwards, he lost all power of speech, but his mental faculties remained unimpaired. There was a slight remission of these symptoms for a few

minutes, and then a fresh attack came on; and this continued until the patient at length succeeded in expressing a wish to be taken to the hospital of La Charité. As he was being helped downstairs to get into a carriage, a new attack impeded his progress; but during the drive he had none, although the slightest shake seemed sufficient to bring it on. These attacks were attended with but little pain; deglutition was very difficult, and the patient felt very weak. After every attack the muscular system relapsed into inertness. At the hospital, emetics were immediately administered to expel the poison if any remained; the vomiting was attended with sudden starts, spasms in the glottis, and difficulty of breathing: the latter symptom, however, soon subsided. The pulse was at 72. Thirty drops of laudanum were administered at the rate of ten for every quarter of an hour, and then thirty more, in three parts, at intervals of half an hour. The patient fell asleep, but was often awakened by the contraction of the muscles of the back and neck. Laudanum was again administered, and sleep returned. On the following morning the patient felt very weak, but only complained of stiffness in the left muscles of the neck; the pulse was at 66. Wine and light food were now given instead of medicine, and on the sixth day the patient left the hospital perfectly recovered.

GLYCERINE PLASTERS.

At a recent meeting of the Obstetrical Society of London, Dr. Tilt drew attention to the fact that when a hundred or a hundred and fifty grains of common starch are boiled in an ounce of glycerine, the result is a very stiff glutinous compound, which has no smell, and does not become rancid; and although sticking firmly to the skin, it can be removed and reapplied. Instead of ordering belladonna plaster, Dr. Tilt prescribes three grains of sulphate of atropia to be rubbed down with a few drops of glycerine, then incorporated with an ounce of hard glycerine ointment, and thickly spread by the patient on gutta-percha cloth or impermeable wash cloth. This can be removed for the morning ablutions, and reapplied after spreading a little more ointment on the same plaster. Morphia and other alkaloids are prescribed in the same way. The samples exhibited by Dr. Tilt were made by Mr. Bullock, of Hanover-street.*

ARSENICAL COMPOUNDS IN GASTRALGIA.

M. Millet, of Tours, states in the *Revue de Thérapeutique*, that the efficacy of tris-nitrate of bismuth in certain forms of gastralgia is mainly referable to the presence of arsenic in the powder. If the bismuth is pure, it is worthless; and as it has of late considerably risen in price, M. Millet substitutes arseniate of soda for the tris-nitrate, as follows:

For poor patients he prescribes:

℞ Sodæ arseniatis, gr. j.;
Aq. distill. ℥ijss.
Alcohol, ℥j.

Dose: one teaspoonful morning and evening, before meals.

To persons in easy circumstances, he recommends:

℞ Sodæ arseniatis, gr. j.;
Syrupi cinchonæ, ℥ix.

Dose: one tablespoonful morning and evening, before breakfast and dinner.

One or other of these preparations generally induces marked improvement in the course of forty-eight hours, and the amendment is occasionally so great, that the patient is tempted to discontinue the use of the remedy, which should, however, be persevered in for about ten days. Should the symptoms after this period not have entirely subsided, the same remedy should again be prescribed for a second time. M. Millet does not venture to assert that an entire cure will always thus be effected, but he confidently predicts good results.†

NEW FORMULA FOR TARTAR EMETIC PLASTER.

Excessive cutaneous irritation induced by the contact of the potassio-tartrate of

* Medical Circular.

† Ibid.

antimony, and the severity of the eruption, its obstinate character, and the indelible scars which it leaves on the skin, have suggested to M. Mialhe the idea of preparing a plaster which, while preserving the revulsive power of the common tartar emetic plaster, is not open to the same objections. The following is the formula he has adopted:—

R Picis Burgundicæ, ʒiv.;
Resinæ, ʒij.;
Ceræ flavæ, ʒij.;
Terebinth, ʒss.;
Ol. oliv., ʒss.;
Antimon. potassio-tartratis, ʒj.

Mix, and spread over linen.*

WATER-GLASS IN SOAP.

In the last number of *Silliman's Journal*, Mr. J. M. Ordway, who has devoted much attention to the composition and application of alkaline silicates, states that a mild silicate (water-glass) is now manufactured in Boston and New York, and has come into very general use among soap-makers. It is used as a substitute for resin, which had been largely employed in the manufacture of soap, before the blockade of the Southern ports. It materially reduces the cost of soap, and imparts neither colour nor smell to it. About 60 per cent, of the fluid silicate, it is stated, may be mixed with the common materials that are employed for making bar soap. Mr. Ordway says:—"It is certainly quite safe to incorporate twenty-five or thirty pounds of liquid water-glass with one hundred pounds of pure oleo-stearate of soda. The compound thus produced has greater detergent power than common soap."

SPONTANEOUSLY INFLAMMABLE PHOSPHORETTED HYDROGEN.

Mr. W. B. Tegetmeier in an instructive article on "Smoke rings" which appears in this month's *Intellectual Observer*, states that the instructions given in most chemical works for the preparation of the above gas are absurdly complicated and incorrect. By attention to the following directions he says it may be prepared with great ease and safety:—Take a very small thin retort capable of holding not more than an ounce or an ounce and a half of water; place in this three or four fragments of the sticks of fused caustic potash, each being about half an inch in length: add as much water as will barely cover them, and then drop in a small fragment of phosphorus, about the size of a horse-bean; apply a very gentle heat with the small flame of a spirit lamp, agitating the retort constantly. A pale lambent flame will first appear in the interior, and when this reaches the orifice and burns in the open air, the retort should be placed on the stand with the beak about an inch under water. Care must be taken not to withdraw the flame of the lamp. When the bubbles of the gas so produced rise to the surface of the water they inflame, and a dense smoke-ring is formed which rapidly enlarges as it rises. The bright spontaneous inflammation of the gas and the production of these beautiful rings render this experiment one of the most striking character.



The Pharmacopœias of Thirteen of the London Hospitals. Arranged in groups for easy reference and comparison. By PETER SQUIRE, F.L.S. London: Churchill and Sons. An admirable little book, which every Chemist and Druggist ought to have within reach. It is filled with the cream of medical experience, skimmed from the receipt books of the following London Hospitals:—Consumption, Guy's, King's College, London, Ophthalmic, Middlesex, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's, Skin, University College, and Westminster. The nature of the work is thus explained by its compiler in the preface:—

* Medical Circular.

"Having had occasion, whilst engaged in the preparation of the British Pharmacopœia, to make frequent reference to the formulæ used in the different London Hospitals which I had classified for convenience; it occurred to me, as also to some of my friends, that such a classified collection of these formulæ, many of them very valuable and not generally known, would be acceptable to the Profession in general, and particularly useful as a ready work of reference to Pharmacæutists who may be called upon to make up prescriptions according to the Hospital formulæ.

"I also thought that their publication in this form might suggest to the different Hospital authorities, when preparing new editions of their respective Pharmacopœias, whether it would not be advisable to modify many of their formulæ so as to assimilate them to those of a like nature in the British Pharmacopœia, and thus simplify and reduce the number of compound drugs."

Mr. Squire has omitted all formulæ which are identical with those already contained in the London, Edinburgh, and Dublin Pharmacopœias, and has reduced many of the Hospital formulæ to smaller quantities, in order to compare them with others. Some twelve hundred useful forms, sanctioned by the most eminent physicians and surgeons, are given, being classified under the following heads:—Acids, Æther, Baths, Bolus, Cataplasms, Caustics, Coagulum, Collodion, Collyria, Confections, Decoctions, Draughts, Drops, Electuaries, Enemas, Fomentations, Gargles, Infusions, Inhalations, Injections, Juleps, Linctuses, Liniments, Lohochs, Lotions, Milk, Mixtures, Ointments, Pigments, Pills, Plasmata, Plasters, Powders, Solutions, Spirits, Suppositories, Syrups, Tinctures Waters, Wines.

A Dictionary of Chemistry etc. By HENRY WATTS, B.A., F.C.S.

Part III. Arsenic—Bismuth. Longmans. 5s.

We shall continue to notice the monthly parts of this important work, for we feel that it would be impossible to do justice to the Dictionary when completed in a single article. Besides, we know that many of our readers who cannot afford to be regular subscribers, will gladly spare five shillings for a part in which some subject of special interest is taken up. The most important contribution to the present part is an elaborate article on "Atomic Weights," by Dr. Odling, the great advocate of the Unitary System of Notation. In this article we have a complete exposition of the views of Dalton, Prout, and the living chemists, respecting the weights of the indivisible proportions of the elements. We have also the arguments which have induced the chemists of Odling's school to double the atomic weights of oxygen, carbon, and some other bodies. The table of atomic weights given includes the symbols, the formulæ of the compounds analysed to determine the weights, and the names of the chemists by whom these weights have been established. So complete a table has never before been published. The article "Atmosphere," from the pen of Dr. H. E. Roscoe, is another remarkable contribution. Mr. W. S. Jevons describes at length the construction and the mechanical theory of the "Balance," and the various forms of the "Barometer." The articles "Aspirator," "Balsam," "Bath," "Beer," "Belladonna," and "Benzoic Acid," are all particularly interesting to the practical pharmacist."



UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

The Second Annual Meeting of this Society was held at the London Coffee House, Ludgate-hill, on Saturday, the 3rd inst.; Mr. John Page in the chair. The Report from the Committee set forth the operations during the past year, and stated that there was a steady increase in the numerical strength of the society, upwards of 2,000 members having been enrolled, and the income more than doubled. Already several of the objects of the society were in full operation, and the committee were extending their connexions throughout the kingdom. They regretted that their exertions during the past session to obtain exemption from jury service for the whole of the trade had not been successful, but they pledged themselves to further effort at the first opportunity.

The inequality of the charge for the patent medicine licence being based upon a false principle, would also receive the early attention of the committee, and have their best efforts to get the charge reduced to a uniform minimum rate.

The Benevolent Fund was progressing very satisfactorily, and the recent festival, under the presidency of Western Wood, Esq., M.P., had been very successful.

The Report, together with the audited statement of receipts and expenditure, was unanimously adopted, and agreed to be published and sent to all the members.

The Secretary then stated that Mr. Gibbons, the Honorary Secretary of the Manchester District Society, had been deputed to see the Central Committee the day previous, and press upon their attention a proposition in accordance with the second and fourth objects of the society, which involved matters of very great importance to the trade, and which had already received the serious consideration of the London Committee.

After a lengthened discussion, the proposition was unanimously adopted, and agreed to be embodied in the Annual Report.

The officers of the society having been re-elected, along with several new members, a vote of thanks to the Chairman and the officers terminated the proceedings.

GLASGOW CHEMISTS AND DRUGGISTS' ASSOCIATION.

The six months course of lectures delivered by Alexander Taylor Machattie, Esq., under the auspices of the Glasgow Chemists and Druggists' Association, having been completed, and the members of the association having been highly pleased with the manner in which the class had been conducted, invited that gentleman to a complimentary supper in the Café Royal, on the evening of Thursday, 30th April. Dr. A. M. Robertson, President of the Association, occupied the chair. John Campbell, Esq., of the Glasgow Apothecaries' Company, officiated as Croupier. After a sumptuous supper had been partaken of, the cloth removed, and the glasses filled, the usual loyal toasts were given from the chair and most heartily responded to.

The Croupier then gave "The Army, Navy, and Volunteers," which was replied to by Mr. Thomson.

After a patriotic song had been sung, the Chairman rose to give the toast of the evening. He said "Mr. Croupier and gentlemen, I now rise to propose the health and prosperity of one who is in every way worthy of our respect and esteem, and in honour of whom we have this evening come together. (Applause). I trust, gentlemen, that you are all prepared with a bumper for this toast, it being no ordinary one, but in reality the toast of the evening. And now, gentlemen, when we as an association have just completed our attendance on the first course of lectures on chemistry, delivered by our worthy guest, I am sure that all those who have had the pleasure of attending that course must feel highly gratified with the masterly way in which those lectures were delivered. The careful though easy style of delivery, the great accuracy of all his experiments, and immense amount of matter he has gone over during the sessions, showed us plainly that Mr. Machattie was determined to make the course as complete and instructive as possible—(applause)—and I am confident that all who had the pleasure of hearing him will agree with me that for fluency and accuracy as a lecturer, Mr. Machattie stands second to none in our city. (Loud applause). As a member of your association I have attended nearly the whole of the lectures, and I can assure you that your selection of Mr. Machattie as your lecturer has been highly honourable to the association, and attended with great success. He combines in his lectures so many essential elements for the successful teaching of his students in the science of chemistry, that those who have attended that course must feel that their knowledge of that science has been greatly enlarged, and in such a way that I believe that in after-life they will feel benefited by their attendance on these lectures. (Applause). We as an association feel how much we are indebted to Mr. Machattie for his valuable services during the past session, and trust that this is only the beginning of our connexion with him as lecturer to us, and we will earnestly look forward to the time when he will rise to a very high position as a lecturer on the science of chemistry, and we hope that some of us in after-life may have the pleasure of saying that Mr. Machattie gave his first course of lectures to our association, when he is an honourable professor, and the association a recognised scientific body. (Great applause). This gentleman I think is not too much to look forward to, Mr. Machattie has youth, energy, and all the necessary qualifications for attaining to such a position, and as for the association let each member apply himself to the task of promoting its interests and in a short time our united labours will be crowned with success. Mr. Machattie having performed his part towards the association so admirably, we considered it our duty to show him how we valued his services by inviting him to be our guest this evening, and by presenting him with a few volumes as a mark of our appreciation of his services during the session."

A splendid edition of the works of Sir Edward Bulwer Lytton was here placed on the table, and the Chairman, turning to the guest of the evening, said, "Mr. Machattie, permit me, in the name of the Chemists and Druggists' Association of Glasgow, to present you with these volumes, as a small token of the high regard and esteem we entertain for you as lecturer to the association, trusting that you may long be spared to use them and enjoy many happy evenings over their pages after the labours of the day. Now, gentlemen, join me in pledging health, happiness, and prosperity to Mr. Machattie."

This toast was drunk amidst loud applause, with all the honours.

Mr. Machattie made a feeling reply, in the course of which he said, "Mr. Chairman, Mr. Croupier, and gentlemen, you must allow me to return you my very sincere thanks for the very unexpected kindness you have done me to-night. I assure you, gentlemen, there is nothing gives more pleasure to a teacher than the knowledge that he is appreciated; and I must say I never knew a more appreciative audience than the members of the Glasgow Chemists' Association. I take this kind mark of your appreciation to-night as flattering evidence that I have not mistaken my profession, and I am happy to hear your worthy President state that this is likely to be only the beginning of my connexion with you as lecturer. I trust, that as years roll on, your association will extend in influence and usefulness; and I assure you I shall at all times be happy to lend all the assistance in my power towards forwarding those schemes you have in view for the education and improvement of the young men connected with your profession, and for which the class I had the honour to conduct was specially organised."

After several other toasts appropriate to the occasion had been given and responded to, Mr. Machattie, in a highly eulogistic speech, proposed "The prosperity of the Chemists and Druggists' Association of Glasgow," which was received with tremendous applause, and replied to by Mr. T. D. Moffat, who said that there was no toast to which he could reply with more pleasure than to the one their guest had just proposed. He assured the gentlemen present that even he was astonished at the success the association had met with in all its undertakings from its very commencement up to that night, and he believed that that success in a great measure was owing to their having made a good beginning. In 1861 there was no association of Chemists existing in Glasgow. It is true that several members of the trade were and are still members of the Pharmaceutical Society, but a Pharmaceutical Society Meeting had not been held in Glasgow for eight years. The members of the trade were in a great measure unknown to each other; and as for any means for the improvement of the young men in their business by classes or meetings of any kind, there were none. We commenced by inviting the trade to a supper, and fifty gentlemen turned out. At the meeting, gentlemen who had not seen each other for years renewed old acquaintance, chatted over trade items, and days and scenes gone by; and when they parted—he was not going to allow the association to run the risk of prosecution under the Forbes Mackenzie Act by saying when—they parted with one wish, to meet again. The fortnightly scientific meetings were then organized, and he did not think he exaggerated when he said that some of the papers read there would have done honour to societies of much greater pretensions. They had had two great social reunions, as he might term them; and to give an idea of their success by comparison, he might state that the United Society of Chemists and Druggists congratulated themselves on having 160 ladies and gentlemen present at their festival: the Glasgow Association had at their first 280, and at their second considerably upwards of 300.

If he might give the London Society a hint, he would say—a conversazione is all very well; but if you want to get on, wind up with a ball; propitiate the ladies, and you are sure of the gentlemen. The Chemists' ball in Glasgow was now an established institution, and looked forward to by the wives, daughters, and sweethearts of the members of the trade as the event of the season. Their last undertaking had been the chemistry class, and the Chairman had told them how successful it had been: he would merely add that, with that modesty so characteristic of the members of the association, twenty pupils had been guaranteed, and when the class was formed fifty-three was found to be the number. Upwards of £100 had been spent; but he was happy as Treasurer to state that the balance in his hands had always been high. He could assure their guest, who had proposed the toast, that any kindly feelings he entertained towards the association were fully reciprocated by the members of it, as their last act had been to elect him (Mr. Machattie) an honorary member. He hoped soon to see the time when every Chemist in the city, employer and employee, would see it to be his duty to become a member of the association.

Mr. Jardine, in a most original and very humorous speech, gave "The Ladies," which was received with loud laughter and applause.

The Croupier then proposed the health of the Chairman, characterising him as "one

who, though he had left the trade for a higher branch of the healing art, was still a Druggist at heart, and had always been a warm friend to the Association."

The Chairman made a suitable reply; and after a number of capital songs had been sung, the company separated at an early hour.

LAW AND CRIME.

SILLEN *v.* HOLLOWAY.—"HOLLOWAY'S OINTMENT" IN FRANCE.

At the Court of Common Pleas, April 18th, Mr. Brandt moved in this case, on affidavits, for a rule for a nonsuit on the ground of surprise. The plaintiff, Dr. Sillen, it will be remembered, brought an action against the defendant, the proprietor of Holloway's ointment, to recover on an agreement that he should have £500 if he obtained him permission to sell his ointment in France and her colonies by brevet. This Dr. Sillen alleged he had done; but it was said the brevet was worthless, as it had become void because of the non-payment of certain fees. The plaintiff obtained a verdict, but a rule was made absolute to set aside that verdict and enter it for the defendant on the above ground. The affidavits on which the learned counsel now moved stated that Dr. Sillen had since the rule was obtained gone over to France, had paid the requisite fees, and the brevet was now in full force, and the defendant had the right to sell his ointment in France and her colonies.

The Lord Chief Justice said the rule as originally disposed of could not be re-opened, but the Court would give the plaintiff a rule absolute in the first instance to enter a nonsuit and amend the former rule if the defendant would consent, and if not there must be a rule *nisi*.—Rule accordingly.

On the 7th inst. Mr. Bovill, Q.C., appeared in this case to show cause against the rule obtained by Mr. Brandt. The learned counsel contended that such a course as was proposed, the Court would not adopt, except in an extraordinary case, and then only on terms, and he submitted that this was not such a case, and further that if the Court in discretion granted the rule, it ought to be part of the terms that Dr. Sillen should give security for the payment of the costs of any future action he might bring. The Court were of opinion that Mr. Brandt's application should be granted so far as entering a nonsuit was concerned, but that Dr. Sillen should not be allowed to proceed with another action until he had paid the costs of the defendant in the present one, and also the costs of this application.—Rule accordingly.

PEPPER *v.* SPROULE.—TRADESMEN AND THE "BLACK LIST."

The trial of this case took place in the Consolidated Nisi Prius Court of Dublin, on Saturday, April 25th, before Mr. Justice Keogh. It was an action on a bill of exchange for £27 10s., the plaintiff, Mr. Wellington Pepper, being a barrister, practising in the Recorder's Court, and the defendant, Mr. John Sproule, a trader, in Dublin. The bill was drawn at three months, and the defendant received only £21, the sum of £6 10s. being charged as interest for three months, which is about £100 per cent. per annum. There is a great deal of bill-discounting of this kind in Dublin, but it is generally done very privately and quietly, and for the credit of the bar it must be said that it is a very rare thing to find a member of that honourable profession engaged in it. This case is worthy of special notice, however, not so much because a barrister is one of the parties, but because of its bearing on the "Black Lists," and the indignant comments the circumstances elicited from the Judge. The defendant was not able to meet the bill when due, but he paid instalments which amounted to £13 as interest on the £21 that had been lent. In addition to this, plaintiff had received £7 5s. for not marking judgment against the defendant when the bill was due. This was the part of the transaction which the Judge denounced in the strongest terms. "What," asked his Lordship, "must be the miserable state of traders in the city of Dublin, when this hard-working, proper man was so afraid of the 'Black List,' that he could write such a letter as this:—'I propose to pay you 30s. on the 9th of October, and if you wait till the following day I will pay you 50s.'? There were various excuses pleaded for that,—fear of the 'Black List,' total ruin, sick family to be looked to,—but such was the fact."

It should be mentioned that the "Black List," is a publication privately circulated among members and mercantile men, in which the names of all persons are entered against whom judgments are marked in any of the courts, and the terror it inspires among struggling traders, it appears from this case, enables creditors to extort large sums under the name of costs, which would be incurred if judgment were marked, but which are esteemed a trifling infliction compared with the insertion of the debtor's name in the "Black List." On this state of facts Mr. Justice Keogh made the following remarks:—

"This charge for not marking judgment was an illegal transaction from beginning to end. It was, in the first place, a fraud on the revenue,—a plain, palpable fraud. Of the

sum of £7 4s. 11d., which the marking of judgment would cost, £1 8s. should have gone to the revenue. He would say that the whole of the machinery of the Court would be made the instrument of an abominable system of oppression if such a transaction were permitted to go unrepudiated. Any man might come to his debtor and say, 'I will mark judgment against you, and you will appear in the 'Black List,' and then away with your credit; but pay me the costs of judgment and I won't mark it.' How, he asked, was this extortion removed from the conduct of those wretched people who in the byways, and lanes, and alleys, meet men and say, 'I will charge you with offences of the most vicious nature unless you give me certain sums of money?'

The "Black List" his Lordship denounced as "another instrument used for the most vile and flagitious purposes."

The jury brought in a verdict for the plaintiff,—£16 5s.,—which, with the sums paid for interest, and for being kept out of the "Black List," makes the whole amount £36 10s., in payment for £21. It is possible the jury did not share the Judge's abhorrence of the "Black Lists."

COWING v. COWING AND WOLLEN.—A PROFLIGATE ASSISTANT.

On the 1st inst. this case came before the Judge-Ordinary in the Divorce Court. Dr. Spinks appeared for the petitioner, who prayed for a dissolution of his marriage, and claimed damages. The respondent and the co-respondent had pleaded a denial of the charge, but they were not represented by counsel. The petitioner, who is a compositor, married the respondent in September, 1855, and in 1860 he was lodging with her at the house of Mr. Taylor, at 12, Penton-place, Walworth. Mrs. Wollen, a widow, and her son, William Wollen, a youth, who was in the employment of a chemist, in the Strand, were lodging in the same house. Several letters were read which had passed between her and the co-respondent of a very affectionate character, from which it appeared that after they had been living in the house together for some time Wollen had succeeded in seducing her, and that on the 3rd of September, 1861, she had given birth to a child, of which, as she and Wollen believed, Wollen was the father. Mrs. Wollen discovered the improper intimacy between her son and Mrs. Cowing, but did not communicate the discovery to Mr. Cowing. She afterwards married Mr. Taylor, and Mr. and Mrs. Cowing then had notice to leave. The adulterous intercourse between Mrs. Cowing and Wollen was still kept up in the lodgings which Mr. and Mrs. Cowing afterwards occupied, but Mr. Cowing had no suspicion of what was going on until the early part of last year. He was then robbed of £60 which he had deposited in a bank by means of a forged order, and he caused inquiries to be set on foot to discover the guilty person. In the course of those inquiries he discovered his wife's adultery, and immediately separated from her and commenced this suit.

One of the witnesses called by Dr. Spinks was Mrs. Taylor, the co-respondent's mother. Before she was sworn, she asked whether she was obliged to give evidence against her own son. She was told by the learned judge that she must, and she was accordingly examined. She said that she had never had any idea of her son's misconduct until she found a letter in his bedroom. She added that he had always been an excellent child, and that the woman had ruined him, and he was only seventeen at the time, while she was several years older. She was shown some letters, and for a long time she would not prove the handwriting, but after much pressure she said she believed they were written by her son. She repeated that he was a most excellent boy, and she burst out crying as she left the box.

The Judge-Ordinary, in summing up, said he was afraid the mother had formed rather too favourable an opinion of her son's character, for his letters, in which he endeavoured to overcome Mrs. Cowing's reluctance to consent to his wishes, showed what kind of a youth he was. A juryman put a question as to the co-respondent's property.

The Judge-Ordinary said they had nothing to do with that question. If a co-respondent had used his fortune as a means of seduction, then it might be taken into account; but that was not the case here. If the co-respondent was a poor man, that did not signify; they had to consider the value of the wife of whom he had deprived the husband, and it made no difference whether he was able to pay the amount or not. The jury found a verdict for the petitioner, with £75 damages.

Decree nisi granted, with costs against the co-respondent.

ACCIDENTS.

GREAT FIRE IN YORK.—DRUG WAREHOUSES DESTROYED.

On Saturday morning, April 25, a very destructive fire, involving the loss of some most valuable property, occurred in York. About twenty minutes past two o'clock, a

policeman named Cartwright was going his rounds, when he discovered smoke issuing from a portion of the back premises of Messrs. Clarke, Bleasdale, and Bell, who carried on an extensive drug business in Colliergate, in the above city. Cartwright immediately gave an alarm, and flames burst from the roof of the premises, which contained a large quantity of valuable drugs and oils of various kinds. The whole pile of extensive buildings was quickly enveloped in flames, which presented a most terrific appearance, and which brilliantly illuminated the city and adjoining neighbourhood. The three York engines were brought to the spot, but there was some delay before they could be got to work. Owing to the inflammable character of the property, and the fact that adjoining the building in which the fire broke out was another drug warehouse belonging to Mr. Cordukes, the greatest alarm and excitement prevailed, it being feared that most of the buildings on that side of the street would be destroyed by the fire. Several of the inmates of the adjoining houses consequently removed their goods, more especially Mr. Sharp, pawnbroker, who had a large stock. There seemed to be no chance of saving the premises of Messrs. Clarke and Co., and consequently the efforts of the firemen were principally directed to the preservation of the surrounding buildings. Notwithstanding all their exertions, however, the fire gradually made way, first to the offices of Messrs. Clarke and Co., which front the street; thence communicating with the premises recently occupied by Mr. Postill, organ-builder; those of Mr. Sharp, pawnbroker; and Mr. Plummer, surgeon. The Centenary Schools, which abutted on a large chapel belonging to the Wesleyans, as well as upon the premises of Messrs. Clarke and Co., were soon destroyed, little more than the bare walls being left standing. The premises of Mr. Postill and Mr. Sharp were likewise in flames, and the fire assumed such alarming proportions that a telegram was forwarded for the Leeds and Hull engines. In the meantime the fire brigade received an accession of strength in the shape of an engine belonging to the North-Eastern Railway Company, and another engine which was accompanied from the barracks by a troop of the 16th Lancers, who worked the engine and assisted the police to keep the street clear of the crowd. The warehouses, &c. of Messrs. Clarke and Co., and most of the valuable contents of the buildings, were totally destroyed. The offices also were very much damaged. Happily, the drug warehouse of Mr. Cordukes was preserved. The cause of the fire is enveloped in mystery, for whether it originated in the engine-house or arose from spontaneous combustion is not known.

FIRE IN COLEMAN-STREET, CITY.

Shortly before two o'clock yesterday morning a fire broke out on the premises of Messrs. Heaton and Co., wholesale druggists, No. 5, Coleman-street. The flames evidently commenced in the drying-room, and had extended from thence to the oil filter room, a building seventy feet long and twenty wide, containing a valuable stock in trade. The fire was confined to the drying-room, the ground floor, and the oil filter rooms. These were burned out. The laboratory, and the stabling, and three houses in Princes-place are also severely damaged by fire, water, &c. The loss will fall upon the Sun, Globe, and Royal Exchange fire offices. The origin of the fire could not be ascertained.

GENERAL NEWS.

SMALLPOX IN LONDON.

The Lords of the Privy Council having had their attention drawn to the present very extensive prevalence of smallpox in London, have, through their medical officer, addressed a circular letter of advice on the subject to the Boards of Guardians of the thirty-six metropolitan unions and parishes, and are also employing a medical inspector for the purpose of personally communicating with the Guardians of affected districts on the arrangements best suited for the emergency. The Guardians, who, it will be remembered, are the local authorities for administering the Vaccination Acts, are urged by the Privy Council to do whatever is in their power to promote vaccination in their respective districts, and especially to enforce the law which requires children to be vaccinated. The measures which the Privy Council particularly advise Guardians to adopt are these:—1. By comparing in detail the register of successful vaccinations with the register of births, and, by making inquiry at elementary schools and other establishments having many young inmates, to ascertain as far as possible what children are not yet duly vaccinated. 2. To give notice to the parents or guardians of such unvaccinated children, warning them of the present danger of smallpox, and reminding them of the provisions of the law. 3. To see that in the local arrangements for vaccination every possible facility is given to the public, and that re-vaccination is freely afforded to persons who properly require it. 4. Wherever there appears to be much general neglect of vaccination, to cause public notices on the subject to be extensively distributed and placarded throughout the district. 5. Under the provisions of the Act 24th and 25th Victoria, c. 59, to cause proceedings to be taken for the recovery of penalties from those

parents or guardians who, after notice, omit to have their children vaccinated, as the law requires.

The letter of the medical officer of the Privy Council concludes by adverting as follows to the subject of hospital accommodation:—

"My Lords also direct me to request that you will bring under the particular notice of your Board that at the present time, when cases of smallpox among the poorer classes of society are arising in London at the rate of many hundreds per week, the Smallpox Hospital, even with the assistance of other hospitals, cannot give more than a tenth part of the accommodation required for the sick, and that consequently patients capable of spreading the disease are now either being detained in their own, often crowded and unwholesome, dwellings, or are received into parish infirmaries, where for the most part they can be but imperfectly separated from other inmates. And I am to say that in their Lordships' opinion it is in the highest degree desirable, for the purpose of arresting the present epidemic of smallpox, Boards of Guardians in those districts where the disease is prevailing should, either separately or conjointly, take measures for establishing, under proper medical advice, temporary hospitals for the exclusive reception of cases of smallpox."

THE LATE INTERNATIONAL EXHIBITION.

The Report of the Royal Commissioners on the late Exhibition is now completed, and will, we believe, be made public in the course of a few days. It is gratifying to be able to state that the balance-sheet appended to this document will show no deficit, but, on the contrary, a small surplus. As we all along anticipated, therefore, the guarantors will not be called upon for a single shilling. This very satisfactory state of affairs, however, is entirely due to the liberality of the contractors for the building, who, besides waiving many of their claims, made good what was a deficit of £15,000 by handing over that amount to the Royal Commissioners, thus enabling them to present their report and wind up their affairs with a balance of some few hundreds still in hand.

POISONED GRAIN.

Mr. Paull's Bill, now before the House of Commons, imposes a penalty on knowingly and wilfully selling or exposing for sale, or purchasing, poison, or grain which has been steeped in poison, or with which poison has been so mixed as to render it calculated to destroy life, with intent that it should be used for injuring or destroying birds or animals. A penalty is also imposed on knowingly and wilfully sowing such poison or poisoned grain.

PARLIAMENTARY INTELLIGENCE.

ALKALI WORKS REGULATION BILL.

During the month there has been much discussion upon this bill in the House of Lords. On the 16th ult. Lord Stanley, of Alderley, in moving its second reading, said, that it carried out the recommendations of the select committee of last Session. Its main object was to prevent the injury occasioned in various ways, and especially to vegetation, by alkali works in the manufacture of soda by the muriatic gas evolved in the process. This gas had a great affinity for water, and this circumstance afforded a mode, which was adopted in some of the best regulated works, of remedying the evil. It was very much to the credit of the manufacturers connected with the trade that they expressed a readiness to be subject to legislation on the subject. The committee therefore recommended that the manufacturers should be compelled to adopt such machinery as would condense the gas, and that this machinery should be under the supervision of inspectors, who should have access to it at all times, both by day and night, in order to see that the machinery was kept in proper working order. He proposed therefore, that all the manufacturers should be required to adopt the necessary remedy for condensing the gas, without determining in the Bill what the particular remedy should be, that the works should be under the supervision of inspectors appointed by Government, and that in no case should a greater quantity than 5 per cent. of the gas be allowed to escape, while 95 per cent. at least should be condensed in the process of the manufacture. He did not think it would be desirable to apply to the great manufacturing interests of this country measures which could not be adopted without injury to them. In this case the manufacturers themselves had given a pledge that they would render every assistance in their power to carry out the provisions of the Bill; but to this was attached a condition which he considered essential to obtaining their assistance, that they should be the subject of special legislation, and that if, in the opinion of Parliament, similar regulations were required with respect to other manufactures than the manufacture of

alkali, they should be carried out by a separate bill and by separate legislation. The greatest care and precaution were necessary in dealing with the processes of manufacture. The power and position of England depended upon her manufacturing freedom, and he firmly believed her pre-eminence had been created and established mainly through freedom from legislative interference. With regard to the alkali manufacture alone, he believed if in its earlier stages it had been subject to a system of inspection, and constant interference had taken place with its chemical experiments, combinations, and processes, it would have been so paralyzed that it never would have arrived at the position in which it stood at present. The amount of capital involved in this manufacture was upwards of £2,000,000; the annual value of its productions was £2,500,000; 19,000 persons were employed in it, and the wages paid reached £871,000 a-year. Their lordships would therefore regret if any legislation, with a view to enable owners of land to recover damages from the manufacturers, should be attended with injury to so important an interest. In this case, however, a remedy has been tried; it had been shown to be effective, it had been adopted without inconvenience, and the manufacturers knew that it might bring them even a profit, as the condensed gas created a muriatic acid, which was a marketable commodity and of great use in many branches of manufacture. The bill proposed a penalty of £50 for the first offence, £20 for the second, and a continued penalty of £2 a day so long as the manufacturer should not adopt measures to abate the nuisance. It was open to any person to proceed by indictment for the removal of any nuisance, and that remedy was shown to be effectual from the fact that many works had been already removed. This remedy would be very much facilitated by the operation of this bill, for whereas formerly great difficulty was experienced on the part of persons receiving injury in ascertaining the precise works from which the injury arose, under the present bill if a previous conviction had been obtained it would be very easy to recover damages in a court of law. The injured persons had the power of going before a county court and recovering damages for not more than £20. He should have added that the penalties were to be recovered by means of the Court of General Quarter Sessions, without the intervention of a jury. The committee had recommended an appeal only in case of a point of law. But he felt strongly that, in a case where they were imposing heavy restrictions upon an important branch of manufacture, it was but just to give the manufacturers power of appeal to a court of law, if they thought that justice had not been done them in the inferior court. The only omission which he had made in the bill was with respect to the manufacture of sulphuric acid and ammonia alum, the gases produced from which were, though offensive to the smell, not very injurious to life and vegetation. He hoped their lordships would be satisfied to limit the operation of the bill to alkali works alone, and that if at a future time it should be necessary to legislate with regard to the other manufactures it would be done by a separate bill.

The Earl of Derby said he should offer no opposition to the second reading of the bill, but should have preferred to associate with the alkali manufacture the manufacture of sulphuric acid and ammonia alum. The latter manufacturers were placed upon exactly the same footing as alkali by Professor Playfair, who had told the committee that the manufacture of sulphuric acid and ammonia alum and similar trades were all injurious both to vegetation and animal life. Again, he was convinced that no point of law could arise rendering an appeal to the superior courts of law desirable; why in so simple a question as the amount of condensation of gas there should be any appeal from the Quarter Sessions to the superior Courts, which would deter persons from coming forward to abate a nuisance, he could not imagine. It was proposed by the Bill that the penalty imposed for the first offence should be a fine of £50, while for the second or any subsequent offence a fine of £20, or of £2 a day, should be inflicted. The heaviest penalty was generally laid upon the second offence, and in this case the course proposed might prove wholly inoperative, as many manufacturers would rather pay £2 a day than incur the expense of adapting machinery. In many instances three months must elapse before the case could be brought on at Quarter Sessions, and in the interval the offence might have been renewed over and over again, because the inspector could not remain upon the spot. A single penalty, therefore, would fall very lightly at the end of that time, and the injury would not be redressed. After some remarks from Lord Wodehouse and Earl Grey the second reading was agreed to.

On the 23rd ult., the House resolved into Committee on this Bill, when some conversation ensued as to the propriety of making workmen liable to penalties for wilful and malicious violation of the provisions of the Bill; but upon the suggestion of the Earl of Derby, who maintained that in that case one of the best understood principles of English law should be set aside, it was agreed that the owner alone should be held responsible.

The Earl of Derby proposed that in the case of a second and continuous offence the

penalty should be increased from £50 to not more than £100. He would leave the Board of Trade to define what a "continuing offence" should be held to be.

Lord Cranworth said that until a court of law had decided that the owner of the works had committed a violation of the law it would be rather hard to double the penalty.

Lord Chelmsford said that every alkali work was to be carried on to the satisfaction of the inspector. Not to do so was in itself an offence under the Act, and he did not therefore see the hardship of increasing the penalty.

Lord Stanley of Alderley said he would consider the proviso proposed by the noble earl.

On clause 6,

Lord Stanley of Alderley proposed a proviso for the appointment of sub-inspectors under the Act.

The clause was agreed to, as were clauses 7 to 11 inclusive.

On clause 12,

The Earl of Derby expressed a desire to have its terms altered, so as to take away from wealthy manufacturers the power of deterring prosecutors from proceeding with their complaints by appealing to the expensive jurisdiction of the superior courts. The questions to be determined upon the evidence of the inspector were so simple that he could not see any necessity for an appeal from the Court of Quarter Sessions, except when a point of law arose and that Court was willing to certify that the question was one fitting to be determined by the superior court. The noble earl concluded by proposing a verbal amendment to carry out the object which he had in view.

After some remarks from Lords Stanley, Cranworth, and Chelmsford, the clause as amended was agreed to. The other clauses were adopted, with some trifling verbal amendments, and the Bill was reported to the House.

On the 27th ult. on the report of the amendments in this Bill,

Lord Stanley of Alderley moved the insertion in clause 44 of words providing that a second or subsequent offence should be punishable with a penalty not exceeding £100.

The Earl of Derby said that he should have liked to see the *minimum* as well as the *maximum* amount of penalty fixed by the Bill; but, as the noble lord had done so much to meet his wishes, he should offer no opposition to the form of the amendment.

This and other amendments were then adopted, and the report was agreed to.

GOSSIP.

At the annual meeting of the Briton Medical and General Life Association, held on the 30th ult., the report stated that 2,023 policies had been issued, the new premiums being £15,275. The total income for the year was £90,780, of which £40,469 had been carried to the reserve. The assets now amount to £178,750.

F.R.S.—From among forty-five candidates, the Council of the Royal Society have recommended for election the following, one in three:—Colonel F. M. Eardley Wilmott, R.A.; Revs. Dr. A. P. Stanley, Dr. G. Salmon, and R. Harley; Dr. F. W. Pavey, Professor D. Oliver; Messrs. E. W. Cooke, W. Crookes, J. Fergusson, F. Field, J. R. Hind, C. W. Merrifield, W. Pingelly, H. E. Roscoe, and S. J. A. Salter.

A conversazione of the Pharmaceutical Society will be held on Tuesday evening the 19th inst.

G A Z E T T E.

BANKRUPTS.

Anderson, John Watson, Hartlepool, druggist's assistant.
 Chichester, George Augustus Hamilton, late of Wigmore-street, Cavendish-square, manufacturer of phosphate of lime.
 Fisher, William Raymond, West Ham, Essex, chemist.
 Ketcher, William Henry Rogers, Billericay, Essex, chemist.
 Riley, Edward, Bradford, near Manchester, washing powder manufacturer.
 Roose, Robert, Flint, chemist.
 Woolstencroft, John, Burslem, chemist.
 Watson, James, Newcastle-upon-Tyne, chemist.
 Ward, Richard Barber, Barnsley, chemist.

PARTNERSHIPS DISSOLVED.

Evans, J. and A. W., Bishop Auckland, druggists.
 Helliwell and Nichol, Huddersfield, chemical manufacturers.
 Lewin and Davids, St. Mary Axe, sponge merchants.
 Pain, T. D. O., and Smith, T. L., Alpha-place, Park-road, Old Kent-road, chemists.
 Stocks and Steele, Leeds, manufacturing chemists.

Correspondence

April 18th, 1863.

SIR,—The announcement, in your March number, of the United Society of Chemists and Druggists' Festival, to take place on the 9th April, led many of your readers to anticipate a full and accurate report of the proceedings on that interesting occasion. Had the report given come under your own notice in time for revision, I feel assured that it would not have escaped correction; but, taking it as it is, I do not think it realises the expectation created. It is both meagre and incorrect. Mr. Wade, for instance, is represented to say "there were 4,500 Chemists and Druggists in the United Kingdom, whilst the Pharmaceutical Society had but 1,000 members;" and an oracular *Voice* corrects him with, "only 800 through examination."

Here is such a thorough jumble of figures as to detract from the interest and materially weaken the force of the entire report. It is well understood that the whole number of Chemists and Druggists in the United Kingdom (including, of course, Assistants) might be safely put down at 50,000; but Mr. Wade, wishing to underrate the number, obviously meant to say 45,000.

The number of *non-examined members* of the Pharmaceutical Society in June last was distinctly stated by Mr. Buott, at the Leeds meeting, to be 1,660, and that of the *examined members* to be 290; and you will find this statement confirmed by Mr. Slugg in his letter to the Editor of the *Manchester Examiner and Times*, as copied in your Journal of last November.

Mr. Wood, the Chairman, was so thoroughly at home in his work,—his remarks many of them evidencing a perfect knowledge of the Society, with its wants, its grievances, and its aspirations, were so pertinent, and so humorous, and diffused such a happy and genial influence over the company, that I should like to have seen them in the report as they fell from his lips.

The only member of the wholesale trade who spoke on the occasion was Mr. Alfred Preston; but the few sentences he uttered were so manly, so decisive and encouraging to the friends of the Society, and yet so courteous to its opponents, that it is a pity a single word of his speech should have been lost.

But why should you anxiously-waiting readers have been denied the "very effec-

tive" speech of Mr. Jonathan Potter? The justly-deserved eulogium he bestowed upon the "Volunteers," was expressed in such vigorous and grammatical language, and fell so fluently from his lips, that a more accustomed speaker might have envied the applause with which it was greeted. And why should the speech of Mr. Wade, argumentative, eloquent, and witty as it was, be lost to fame? I should like to have seen a verbatim report of it, for the world would then have known that we had an orator amongst us.

In brief, let me ask you where was the Reporter of the CHEMIST AND DRUGGIST? I have heard it whispered that one was specially appointed. Was he at the dinner? Had he left his note-book at Exeter-hall, or the Old Bailey, or at home? Or were his notes obliterated through their unfortunate propinquity to a leaky decanter? Or, as he has "not been heard of since," is it not possible that he may have incontinently let some secret of the press escape him, and met with the fate which Mr. Hollingshead so pathetically spoke of at the dinner, as being mysteriously associated with Waterloo Bridge?

Be your Reporter dead or alive, I trust you will give us a better report next year. Meanwhile, ever watchful for the interests of the United Society of Chemists and Druggists,

I am, Sir,
Your obedient Servant, VIGIL.

98, York-street, Westminster,
April 20th, 1863.

DEAR SIR,—After the solemn warning by Mr. Hollingshead against offending the Press, I approach that dread estate with great timidity, but am emboldened by the admission that the "printer's devil" had a hand in the report of the Annual Dinner on the 9th inst.; and I doubt not that the errors which reflect on your reporter may be attributed to that imp of mischief before mentioned.

The numbers of the various sections of the trade were mentioned by me as being 45,000 in all, out of which number the Pharmaceutical Society had about 2,000—800 only holding their certificate through examination; and that the United Society, although but two years of age, already outnumbered those of the older Society. By making this correction you will oblige me, and I am,

Yours truly,
JOHN WADE.



Oxide of Copper.—Mr. E. C. C. Stanford prepares oxide of copper, so largely used in organic analysis, by the cheap process of fusing together two parts of dry sulphate of copper with three parts dry carbonate of soda. The fused mass is poured into water, which dissolves out sulphate of soda, and leaves the desired oxide. The latter should be separated by filtration and thoroughly washed.

Incompatibles.—"An old subscriber" writes:—One sometimes hears a laugh at the ignorance exhibited by medical practitioners in their prescriptions. I think the following is a brilliant example of unchemical mixture—

R. Potassæ Bicarb. ʒj.
Ferri Citrat. c Quinā ʒj.
Chlorodyne ʒj.
Acid Hydrocyanic. Dil. mxx.
Aquæ ad ʒviij. M. ft. mist.

You may possibly deem this deserving of a corner in your Journal.

How to put Labels on.—The *Canada Lancet* gives the following plain directions:—Paste the label with bookbinder's paste, by means of a small brush, applying a coating as thick as a piece of thick paper. Let it stand a minute or two to soak in; then rub nearly the whole off with the finger, seeing that it is merely moist all over; and apply it at once to the bottle, stretching it in its place by means of the thumbs placed at each side; then cover it with a piece of paper to keep it clean, and keep all immoveable whilst rubbing hard with the hand to make it smooth.

In labelling bottles for a surgery, first form a plumbline out of a piece of thread and a weight, and hang it back of your shelf; the bottle to be labelled must be now placed in front of this, and turned round until it stands plumb with the line; should it lean at all, let it lean backwards. Now put the label on the bottle, the height you desire, in the manner directed above. The labels of the rest of the bottles intended to go together, should be placed exactly the same height from the shelf they stand upon as the first one, and each should be measured by it.

Next apply a coating of mucilage of gum arabic, and, when dry, another of copal varnish, putting the latter on as thinly as possible.

To make Bookbinders' Paste.—Take 4ozs. wheat flour (a teacupful), and a gill of cold water, beat into a smooth batter, then add another gill of the cold water; stir well, and pour the mixture into a pint of hot water, to which you have previously added quarter of an ounce of alum; stir over a brisk fire until it comes to boiling point, straining it afterwards if lumpy. This is the best application for sticking labels to bottles, as it does not show when dry.

Burnt Sponge.—Tear half a pound of clean coarse sponge into small pieces, put them into a length of new stove pipe, fastening a stopper to each end with wire; then put it into a stove on a wood fire, and then turn it occasionally with the tongs; when the gas begins to burn very briskly around the closed ends, remove it, and rub the burnt sponge into powder in a mortar. If kept burning too long, the iodine and bromine will be driven off, and the remedy become worthless.

F. C. S.—"Gofynwr" Wrexham.)—These letters stand for "Fellow of the Chemical Society." The candidate for Fellowship must be known as a scientific chemist. He is elected by the general body of the society.

Aquarium Cement.—(W. James.) We cannot tell you what cement is usually employed for fixing the glass slides in aquaria. We should imagine that the ordinary chemical cement used for the plates of galvanic batteries would answer the purpose. This is made from black rosin 7lb., red ochre 1lb., plaster of Paris ½lb., well dried and melted together with continual stirring until frothing ceases.

Unanswered Queries.—In consequence of the illness of one of our writers, we have to crave the patience of several querists until our next issue.

NOTES RELATING TO THE MANAGEMENT OF OUR JOURNAL.

Queries.—We cannot undertake to attend to those which are anonymous, or to send answers through the post.

Correspondence.—All communications should be addressed to the Editor, at 24, Bow Lane, E. C.; those intended for publication should be accompanied by the real names and addresses of the writers.



London, May 13.

The market for Chemicals has been quiet throughout the month; in fact, the business done has been confined to mere retail lots at barely late prices. A fair business has been transacted in Tartaric Acid at the advanced price of 1s. 6½d. Citric Acid remains dull at 1s. 6d. Small sales in Oxalic Acid at 8d. to 8½d. Chlorate of Potass remains dull at 11½d. to 12d. Sal Acetos is steadier at 10½d. Prussiate of Potass in limited demand at 11¾d. to 12d. Bichromate is advanced to 8¾d. to 9d., but little doing: makers, however, are firm. Iodine is dull, and the price nominal at 3½d. for seconds and 3¼d. for firsts. Sulphate of Quinine is easier; French 6s. 3d., English 6s. 6d. Soda Ash is better, 2½d. to 2½. Soda Crystals are dull and lower; sellers at 97s. 6d. ex ship. Brimstone is dull; flour 11s., and roll 9s. Bleaching Powder more in demand at 10s. to 10s. 6d. Several sales have been made in Sulphate of Ammonia at 14s. 6d. to 15s. Sal Ammoniac quiet; firsts 37s. 6d., and seconds 35s. 6d. Sulphate of Copper steady, 30s. 6d. to 31s. 6d. Alum quiet; tierces £7, and barrels £7 10s. Resin is dearer and more in request; French has sold at 23s. 6d. to 24s., and Common American 28s. Turpentine is lower; sales of American made at 97s. to 98s., and French 93s. to 94s. Saltpetre has become dull and lower; refiners are sellers at 40s. to 40s. 6d. cash f. o. b. Petroleum is more in request; and the price of Refined has advanced to 1s. 10d. on the spot, and 2s. paid for late delivery. Sales of Crude have been effective at £14 for Pennsylvanian. Both Montreal Pot and Pearl Ashes are without change. Linseed Oil is better, with a good business; the price on the spot is 44s. 3d. to 44s. 6d.; Hull 43s. 3d. to 43s. 6d., and last six months 42s. Rape is lower; Foreign Brown is 49s. 6d. to 50s., and Refined 52s. 6d. to 53s. In other goods no change.

In the Drug market sales have been made to a moderate extent only throughout the month, without much change in prices. Large parcels of Castor Oil have been brought forward, and prices gave way early in the month, but have since recovered, good and fine Pale selling at 5d. to 5½d. Oil Aniseed is dull at 5s. 7d., with buyers at 5s. 6d. Further sales of Oil Cassia have been made at 7s. 11d. to 8s. A parcel of New China Rhubarb was held for 4s. for flat and 3s. 3d. to 3s. 6d. for round. Ipecacuanha is quiet; some Common sold at 5s. 8d. to 5s. 11d. Some parcels of Roll Annatto sold at 9d. to 9½d. Cape Aloes are 1s. to 2s. dearer. Barbadoes and Hepatica are without change. Some parcels of Turkey Opium of fine quality sold at 18s. 6d. to 19s. 6d., and inferior sorts 14s. 6d. to 16s. Fine sifted Turkey Arabic is dearer; other kinds are cheaper. Bark is had for late rates. Tinnivelly Senna sold at 2½d. to 6½d., and fine 10½d. to 1s. 2½d. Alexandria sold at 4½d. Cardamoms are without change. Camphor is dull. Cream Tartar is lower; sales made at 115s.

PRICE CURRENT.

These quotations are the latest for ACTUAL SALES in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the CASH PRICES IN BULK. They will, however, be able to form a tolerably correct idea of what they ought to pay.

	1863.				1862.					1863.				1862.			
	s.	d.	s.	d.	s.	d.	s.	d.		s.	d.	s.	d.	s.	d.	s.	d.
ARGOL, Cape, pr ct.	85	0	102	6	90	0	97	6	BRIMSTONE,								
French	40	0	.60	0	60	0	.85	0	rough.....per ton	122	6	125	0	145	0	0	0
Oporto, red	45	0	.48	0	45	0	.50	0	roll.....	180	0	0	0	260	0	0	0
Sicily.....	70	0	.78	0	65	0	.80	0	flour.....	220	0	225	0	300	0	0	0
Naples, white....	65	0	.80	0	65	0	.80	0	CHEMICALS,								
Florence, white...	90	0	97	6	90	0	100	0	Acid—Acetic, pr lb	0	3½	0	4	0	4	0	4½
red.....	80	0	.85	0	85	0	.87	6	Citric	1	6	1	6½	1	8½	1	9
Bologna, white....	110	0	115	0	115	0	120	0	Nitric	0	4	0	5½	0	4½	0	5
ARROWROOT,									Oxalic	0	8	0	8½	0	9½	0	10
duty 4½ per cwt.									Sulphuric	0	0½	0	0	0	0½	0	0
Bermuda...per lb.	1	4	1	7	0	11	1	4	Tartaric crystl	1	6½	0	0	1	8½	1	9
St. Vincent.....	0	4	0	7½	0	3	0	6	powdered.	1	0½	1	7	1	9	0	0
Jamaica,	0	4½	0	6	0	2½	0	3½	Alum.....per ton	140	0	150	0	130	0	135	0
Other West India.	0	3	0	3½	0	2½	0	3	powder	160	0	0	0	145	0	0	0
Brazil.....	0	2	0	4	0	1½	0	2	Ammonia. Crb. lb.	0	5	0	5½	0	5½	0	6
East India.....	0	2½	0	4	0	1½	0	2½	Sulphate per ton	290	0	300	0	270	0	290	0
Natal.....	0	5½	0	9½	0	2½	0	7½	Antimony, ore...	200	0	230	0	260	0	280	0
Sierra Leone.....	0	3½	0	5	0	2½	0	5	crude, per cwt	22	0	.23	0	24	0	.28	0
ASHES,....per cwt.									regulus.....	40	0	0	0	46	0	.48	0
Pot, Canada, 1st sort	82	6	0	0	84	0	0	0	French star...	40	0	0	0	47	0	0	0
Pearl, do. 1st sort.	32	6	0	0	34	0	.35	0	Arsenic, lump....	16	6	.17	0	17	0	.18	6

PRICE CURRENT—continued.

1863.				1862.				1863.				1862.					
CHEMICALS.								DRUGS.									
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.		
Arsenic powder ..	6	6	7	0	8	3	10	0	Cardamoms, inferior	5	8	6	6	6	2	7	0
Bleaching Powder.	10	0	10	6	9	0	9	6	Madras.	3	6	6	3	4	0	6	4
Borax, E. I. refund	52	6	0	0	52	6	0	0	Ceylon ..	4	9	5	0	4	4	4	8
British	50	0	52	0	54	6	65	0	Cassia, Fistula pr ct.	15	0	61	0	12	0	25	0
Calomel... per lb.	2	2	0	0	2	10	0	0	Castor Oil, 1st pale, lb	0	54	0	6	0	64	0	62
Canphor, refined.	2	2	2	5	2	10	3	2	second	0	43	0	54	0	54	0	61
Copras. grn. pr. tn.	57	6	60	0	65	0	0	0	infr. & dark	0	44	0	44	0	54	0	54
Crrsiv. Sublime lb.	1	11	0	0	1	11	2	0	Bombay. in casks	0	0	0	0	0	5	0	54
Green Emuld. pr. lb.	0	0	0	0	0	9	0	11	Castorum	1	2	26	0	1	0	26	0
Brunswk. cwt.	0	0	0	0	14	0	42	0	China Root, pr ct.	10	0	15	0	10	0	15	0
Iodine, dry, pr. oz.	0	34	0	34	0	54	0	6	Coculus Indicus ..	10	0	13	0	14	0	15	0
Magnesia Crbn. ct.	42	6	45	0	42	6	45	0	Cod-liver Oil, gal...	4	2	6	0	4	9	6	0
Calcedin, lb...	1	6	1	8	1	6	0	0	Cleynth. apple, lb...	0	8	1	0	0	7	1	0
Minium red, pr. ct.	22	0	22	6	21	6	23	0	Colombo Rt. pr. ct.	15	0	48	0	20	0	52	0
orange	32	0	33	0	33	0	34	0	Cream Tartar, pr. ct.								
Ptsh. Bichrom. lb.	0	83	0	9	0	84	0	84	French	115	0	0	0	127	6	130	0
Chlorate	0	114	1	0	0	11	0	114	Venetian	117	6	0	0	0	0	130	0
Hydriodate oz.	0	44	0	5	0	45	0	54	grey	110	0	0	0	112	6	115	0
Prussiate .. lb.	0	114	1	0	1	0	1	1	brown	97	6	105	0	105	0	115	0
red	2	1	2	2	2	2	0	0	Croton Seed	40	0	50	0	50	0	80	0
Precipit. red pr. lb.	2	9	0	0	2	9	2	10	Cubebis	110	0	115	0	115	0	120	0
white	2	9	2	10	2	10	0	0	Cumin Seed	27	0	35	0	48	0	55	0
Prussian Blue	1	0	1	10	1	6	1	10	Dragon's bld. reed.	200	0	300	0	200	0	240	0
Rose Pnk... pr. ct.	29	0	0	0	29	0	30	0	Jump	95	0	260	0	130	0	200	0
Sal-Acetos... pr lb.	0	104	0	104	0	104	0	11	Galangal Root	24	0	32	0	20	0	23	0
Ammoniac, ct.									Gentian Root	21	0	22	0	17	0	19	0
British	35	0	37	6	36	0	38	0	Guinea Grains								
Epsom	8	0	8	6	8	3	8	6	per cwt.	47	0	50	0	52	0	53	0
Glauber	5	0	5	6	5	6	0	0	Honey, Narbonne.	60	0	80	0	60	0	85	0
Soda, Ash, pr deg.	0	24	0	0	0	24	0	24	Cuba	24	0	36	0	28	0	36	0
Bicarbonate .. ct.	12	6	13	0	12	0	13	0	Jamaica	26	0	75	0	26	0	65	0
Crystals per ton.	97	6	0	0	90	0	95	0	Ipecacuanha, pr lb.	6	4	6	6	6	10	7	0
Sgr. Lead, white, ct.	37	0	0	0	37	0	38	0	Isinglass, Brazil...	0	10	3	10	0	10	3	10
brown	25	0	0	0	28	0	0	0	East India	0	9	3	0	0	6	3	0
Slphe. Quinine oz	6	6	0	0	8	0	8	6	West India	3	0	3	0	3	0	3	7
British in bottl.	6	6	0	0	8	0	8	6	Russian	9	6	13	0	9	6	13	0
Foreign	6	3	0	0	7	3	7	6	Jalap	1	0	1	4	1	9	5	0
Sulphit. Zinc .. cwt.	14	6	15	0	14	6	15	0	Jniper Berries cwt.								
Verdigris	1	1	1	3	1	3	1	5	German & Frnch	8	0	9	0	9	0	11	0
Vermilion, English	2	8	3	1	3	0	3	4	Italian	8	0	10	0	10	0	12	0
China	2	2	2	4	2	6	2	8	Lmon Juice, pr deg.	0	04	0	0	0	04	0	04
Vtrl. blue or Romn.									Liquorice, per cwt.								
per cwt.	31	0	33	6	33	0	35	0	Spanish	80	0	83	0	83	0	90	0
COCHINEAL, pr. lb.									Italian	80	0	90	0	85	0	95	0
Honduras, black..	2	6	4	2	2	8	3	10	Manna, flaky	3	0	3	6	2	6	0	0
silver	1	4	3	4	1	6	3	4	small	1	6	0	0	1	6	1	9
Mexican, black...	2	7	3	0	2	6	2	9	Musk	18	0	28	0	25	0	34	0
silver	2	6	2	7	2	5	2	11	Nux Vomica	9	0	11	0	8	0	9	0
Lima	2	7	3	2	2	7	3	2	Opium, Turkey ..	16	0	19	6	14	6	0	0
Teneriffe, black ..	2	7	3	2	2	7	2	11	Egyptian	7	0	12	0	6	0	11	0
silver ..	2	6	2	8	2	5	2	9	Orris Root, pr cwt.	26	0	28	0	27	0	29	0
DRUGS.									Pink Root, per lb...	3	0	3	3	1	9	2	2
Aloes, Hepatic, ct.	130	0	190	0	130	0	200	0	Quassia (bit. wd) ton	90	0	100	0	70	0	80	0
Socotrine	220	0	380	0	160	0	480	0	Rhatania Root, lb.	0	9	1	3	0	4	8	0
Cape, good	45	0	47	0	38	0	42	0	Rhbrb. China, rnd.	1	6	4	3	0	9	2	10
inferior	28	0	42	0	20	0	36	0	flat	1	9	4	6	1	2	3	0
Barbadoes	60	0	360	0	60	0	420	0	Dutch, trmd.	5	6	6	0	3	6	4	0
Ambergris, gray.									Russian	12	6	13	0	11	6	0	0
per oz	15	0	18	0	35	0	38	0	Saffron, Spanish ..	35	0	36	0	45	0	45	6
Angelica Root, ct.	20	0	35	0	20	0	35	0	Salep ... per cwt.	140	0	160	0	130	0	190	0
Aniseed, China str.	100	0	105	0	70	0	80	0	Sarsaparilla, Lima	0	10	1	4	0	9	1	3
German, &c.	19	0	38	0	26	0	40	0	Para	0	9	1	1	0	10	1	2
Balsam Canada, lb	1	0	0	0	1	4	0	0	Honduras	0	8	1	3	0	10	1	4
Capivi	1	5	0	1	1	8	1	94	Jamaica	1	2	2	2	1	5	2	3
Peru	4	10	0	0	4	6	4	84	Sassafras .. per cwt.	0	0	0	0	11	0	12	0
Tolu	3	9	0	0	3	0	3	2	Scammony per lb.								
Bark Cascarella ct.	23	0	44	0	23	0	44	0	virgin	27	0	34	0	28	0	36	0
Peru crown & grey									second	14	0	24	0	14	0	24	0
per lb	0	10	2	2	1	2	2	6	Seneka Root	4	6	4	9	2	4	2	6
Calisaya flat...	3	3	4	0	4	4	4	6	Senna, Calcutta ..	0	0	0	0	0	2	0	24
quill	3	0	3	9	3	10	4	2	Bombay	0	23	6	44	0	2	0	34
Carthagena...	1	3	2	4	1	3	2	6	Tinnevely	0	4	1	6	0	24	1	64
Pitayo	1	9	2	6	1	10	2	8	Alexandria	0	5	0	8	0	3	0	6
Red	3	0	7	6	2	6	6	0	Snake Root	3	6	3	9	1	11	2	2
Bay Berries, pr ct.	22	0	40	0	22	0	40	0	Spermaceti, refined	1	0	1	2	1	0	1	2
Bucca Leaves, lb.	0	24	1	6	0	3	1	3	Squills	0	1	0	24	0	1	0	2
Camomile Flowers	35	0	65	6	20	0	50	0	Tamarinds, E. Ind.	10	0	13	6	10	0	13	0
Camphor, China...	150	0	152	6	210	0	220	0	W. I. per cwt.	18	0	34	0	15	0	30	0
Canella Alba	19	0	38	0	19	0	40	0	Terra Japonica...								
Cantharides, pr lb.	2	2	2	6	2	3	2	4	Gambier, cwt	21	0	25	0	17	0	17	9
Cardamoms. Mlt-ar.									Cutch, cwt	25	0	25	6	24	0	25	6
good	6	6	7	0	7	6	7	9	Valerian Root, Eng	20	0	40	0	20	0	40	0

PRICE CURRENT—continued.

	1863.			1862.				1863.				1862.		
	s.	d.	s. d.	s.	d.	s. d.		s.	d.	s. d.		s.	d.	s. d.
RUGS							OILS.							
Vanilla, Mexican lb	25	0	.50	0	25	0 .55	Clove	0	2	.04	0	4	0	0
Wormseed, pr cwt.	2	0	.00	0	2	0 .00	Croton	0	0	.00	0	0	3	0
U.M. per cwt.							Juniper per lb.	1	10	.00	0	10	.3	0
Ammoniac, drop.	100	0	120	0	90	0 120	Lavender	2	6	.4	6	2	6	.5
" lump	15	0	.65	0	15	0 .70	Lemon	4	0	.9	0	4	6	.9
Animi, fine pale	220	0	250	0	290	0 320	Lemongrass, pr oz	0	6	.5	0	5	4	.6
bold amber	190	0	210	0	220	0 270	Mace, ex	0	1	.0	2	0	1	.0
medium	160	0	180	0	160	0 180	Neroli	5	0	.7	0	6	0	.9
small & dark	100	0	.55	0	120	0 160	Nutmeg	0	1	.0	2	0	1	.0
ordinry dark	60	0	.55	0	40	0 .90	Orange per lb.	5	0	.6	6	6	6	.7
Arab. E.I. pale pkd	34	0	.50	0	32	0 .45	Otto Roses, per oz	14	0	.22	0	15	0	.24
unsord, good to f	20	0	.30	0	28	0 .30	Peppermint, pr lb.							
red and mixed	15	0	.30	0	18	0 .23	American	8	6	.14	6	7	0	.12
siftings	15	0	.30	0	18	0 .23	English	33	0	.34	0	33	0	.38
Turkey, pkd, gdo to f	115	0	180	0	110	0 160	Rhodium per oz.	3	6	.5	6	3	9	.6
second & infr.	50	0	110	0	48	0 105	Rosemary per lb.	1	8	.3	0	1	10	.3
in sorts	32	0	.50	0	30	0 .42	Sassafras	3	0	.4	0	3	6	.4
Gedda	24	0	.26	0	23	0 .29	Spearmint	5	0	.8	6	5	0	.12
Barbary, white	42	0	.50	0	34	0 .38	Spike	1	3	.1	6	1	3	.1
brown	28	0	.29	0	26	0 .28	Thyme	1	9	.2	3	1	9	.2
Australian	24	0	.25	0	26	0 .00	PITCH, Brtsh, pr cwt.	12	0	.00	0	8	0	.00
Assafet. fr. to gd.	30	0	112	0	40	0 115	Swedish	0	0	.00	0	10	6	.11
Benjamin, 1st, qual.	350	0	630	0	400	0 560	SALT PETER, pr cwt.							
2nd qual	230	0	300	0	260	0 330	Engl, 6 p. c. rounder	37	0	.38	0	42	6	.43
3rd	50	0	240	0	60	0 180	over 6 per cent.	36	0	.36	6	40	6	.42
Copal, Angola red.	95	0	100	0	100	0 125	Madras	35	0	.37	0	39	6	.40
pale.	35	0	100	0	95	0 105	Bombay	34	0	.36	0	37	6	.38
Benguela	35	0	100	0	105	0 140	British-refined	40	0	.40	6	44	6	.46
Sierra Leone	5	0	.1	6	0	9 .1	Nitrate of Soda	13	9	.14	6	14	0	.14
Manilla pret	25	0	.44	6	20	0 .40	SEED, Canary, pr qr.	38	0	.50	0	40	0	.50
Dammar ple. pr ct	36	0	.48	0	40	0 .50	Caraway, King, p. c.	0	0	.00	0	23	0	.25
Galbanum	100	0	120	0	100	0 120	German, &c	0	0	.00	0	0	0	.00
Gmbege, pkd. pipe	160	0	190	0	140	0 180	Coriander	10	0	.12	0	15	0	.17
in sorts	90	0	150	0	80	0 110	East India	0	0	.00	0	0	0	.00
Glaculum pr lb.	0	6	.1	5	0	7 .1	Hemp	40	0	.44	0	46	0	.59
Kino per cwt.	180	0	260	0	200	0 230	Linseed, Black Sea	63	0	.74	0	59	0	.00
Kowrie	38	0	.52	0	25	0 .30	Calcutta	64	0	.67	0	59	0	.60
Mstic, pkd. pr lb.	5	0	.5	3	6	0 .6	Bombay	69	0	.70	0	65	0	.00
Myrrh gd & h pr ct	150	0	170	0	160	0 180	Egyptian	62	0	.63	0	58	0	.59
sorts	70	0	130	0	70	0 130	Mustard, brn, p. bhl	7	0	.12	0	7	0	.10
Oliganum, pl. drop	65	0	.77	6	56	0 .70	white	6	0	.8	6	6	0	.9
ambr & yel.	48	0	.62	0	44	0 .55	Poppy, E.I. per qr	60	0	.00	0	59	0	.00
mixd. & dk.	16	0	.35	0	12	0 .35	Rape, English	0	0	.00	0	0	0	.00
Senegal	48	0	.50	0	38	0 .49	Danute	70	0	.00	0	0	0	.70
Sancac	35	0	110	0	30	0 105	Calcutta, fine	67	0	.68	0	64	0	.00
Tragacanth, leaf	180	0	300	0	180	0 320	Bombay	69	0	.77	0	70	0	.71
in sorts	100	0	130	0	100	0 130	Teel, Sesme or Gngy	66	0	.70	0	68	0	.70
OILS							Cotton per ton	160	0	.00	0	150	0	.155
Seal	42	0	.48	10	35	0 .42	Gnd. Nut Krels, tn	840	0	.350	0	350	0	.960
Sperm, body	32	0	.38	10	91	0 .92	SOAP, Lnd, yel. pr ct.	22	0	.36	0	21	0	.36
Cod	47	10	.48	0	40	0 .00	mottled	36	0	.38	0	34	0	.36
Whale, Greenland	0	0	.00	0	0	0 .00	curd	50	0	.00	0	84	0	.36
Sth Sea pale	42	0	.45	10	35	0 .66	Castile	40	0	.41	0	39	0	.40
E. I. Fish	38	10	.00	0	30	0 .33	Marsiles	40	0	.42	0	40	0	.41
Olive, Galipoli, ton.	58	0	.00	0	57	0 .58	SOY, China, per gal.	2	1	.2	3	2	3	.2
Florence, i-chst.	1	0	.1	2	0	0 .22	Japan	0	10	.1	0	0	8	.00
Cocaoat. Coch. tn	50	6	.51	6	50	6 .51	SPONGE, Turk f. pkd	20	0	.24	0	20	0	.24
Ceylon	49	0	.50	0	49	6 .50	fai togood	8	0	.13	0	8	0	.13
Sydney	42	0	.47	0	43	0 .49	ordinary	3	0	.6	0	3	0	.6
Ground Nut & Gin.							Bahama	0	4	.1	3	0	3	.1
Bombay	45	0	.46	0	44	10 .45	TURPENTINE,							
Madras	48	0	.00	0	45	0 .00	Rough per cwt.	0	0	.00	0	0	0	.00
Palm, fine	37	0	.37	6	42	0 .42	Spirits, French	0	0	.93	0	0	0	.00
Linseed	44	5	.44	6	36	9 .37	American, incks	97	0	.00	0	71	0	.00
Raped. Engl. pale	51	6	.00	0	47	0 .00	WAX, Bees, English	170	0	.175	0	172	6	.175
brown	49	0	.00	6	46	0 .00	German	162	6	.180	0	175	0	.180
Foreign do	52	6	.53	0	47	0 .48	American	165	0	.175	0	160	0	.170
brown	49	6	.50	6	46	3 .00	white fine	0	0	.00	0	0	0	.00
Lard	49	0	.00	0	51	0 .00	Jamaica	165	0	.180	0	175	0	.180
Tallow	39	0	.40	0	37	0 .00	Gambia	170	0	.175	0	160	0	.170
Rock Crude	8	0	.14	5	0	0 .00	Mogadore	120	0	.155	0	120	0	.160
Ons, Essential—							East India	140	0	.170	0	140	0	.170
Almond essen. lb.	19	0	.00	0	19	0 .00	ditto, bleached	170	0	.230	0	165	0	.200
expressed	0	0	.00	0	1	0 .00	vegetable, Japan	63	0	.89	0	56	6	.77
Anised	5	6	.5	7	5	8 .5	WOOD, Dry, per ton.							
Bay	110	0	120	0	110	0 130	Fustic, Cuba	145	0	.115	0	130	0	.105
Bergamott. pr lb.	7	0	.10	6	6	6 .13	Jamaica	120	0	.140	0	105	0	.105
Cajeputa, bond, oz.	0	24	.0	24	0	1 1/2	Savaniia	125	0	.127	6	100	0	.00
Caraway pr lb.	4	3	.5	6	4	3 .6	Zante	0	0	.00	0	0	0	.00
Cassia	7	11	.8	0	8	9 .9	Logwood, Cmpehy	180	0	.190	0	0	0	.210
Cinamon (in b), oz	1	6	.3	6	1	0 .4	Honduras	130	0	.140	0	110	0	.00
Cinamon Leaf	0	2	.0	4 1/2	0	1 .0	St. Domingo	105	0	.110	0	110	0	.115
Citronel	0	4 1/2	.0	6	0	4 1/2 .0	Jamaica	90	0	.00	0	110	0	.115



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2513. J. THOM. *Improvements in mounting or fitting artificial teeth.* Dated September 12, 1862.

This invention is carried out as follows:—A model of the mouth to which the teeth are to be fitted having been taken in wax (or other plastic material), and the artificial teeth placed in their proper positions, a cast is taken therefrom in plaster of Paris in the usual manner. After the mould has been completed and become hard, the wax is removed, and its place supplied with india-rubber and sulphur, which is heated to a temperature of about 330 deg. Fahr., when the india-rubber becomes semi-fluid and takes the form of the mould; at the same time it becomes vulcanized and hardened. In cooling, the vulcanized india-rubber is found to shrink or become distorted from the original pattern, and therefore does not accurately fit the mouth from which the model was taken. In order to remedy this defect, and give the required accuracy to the artificial gum, the patentee submits it to the following additional and corrective process, which he claims as constituting his invention:—Having trimmed the vulcanized india-rubber, and made any necessary corrections thereto, he replaces it (the teeth being imbedded in their proper positions) in the plaster mould, within a metal collar of conical shape, which by means of a screw press brings the parts of the plaster mould in close contact with each other and with the vulcanized india-rubber. While subjected to this pressure, he heats it to about 220 deg. Fahr., which so far softens the vulcanized india-rubber as to cause it to conform itself strictly to the mould. In this state it is left to cool and harden; and being taken out, it retains the form of the mould, and accurately fits the mouth from which the original model was taken. *Patent completed.*

2552. W. and W. H. WATSON. *An improved process or processes for the preparation of certain colouring matters from aniline.* Dated September 17, 1862.

Here the inventors mix aniline with aqua regia in the proportion of about two parts of aniline and one part of aqua regia,

and subject the mixture to a temperature of about 340 deg. Fahr.; and by continuing this temperature colouring matter is gradually formed. The colouring matters produced are red and blue, and another substance of a dark colour. They wash out the red colouring matter by water, and then treat the residue with alcohol, which dissolves the blue colour and the dark substance. To the alcoholic solution they add five or six times the volume of benzole and leave the mixture at rest for some time to settle. The benzole retains in solution the black colouring matter, and the blue is precipitated. They then decant off the liquids. This blue colouring matter is soluble in alcohol, and is then ready for use. *Patent completed.*

2565. W. GLASS. *Improvements in the treatment of sulphuret of antimony, and in obtaining products therefrom.* Dated September 19, 1862.

This invention consists in heating to redness in a close vessel, such as a crucible, retort, or flattened dish, sulphuret of antimony (antimony ore or crude antimony), with or without additional sulphur or antimony, and projecting upon or into them or it in a melted or fluid state, by means of a fan or pump, or by other means, either from the top or from any other direction, atmospheric air or oxygen gas, or both, provision being made in the crucible or other vessel for the ingress of air, oxygen, or both, and for the egress of vaporized products of combustion, oxides and sulphoxides of antimony and sulphurous acid, which are conducted into tubes, flues, or chambers, where the oxides of antimony are deposited in fine powder, and the sulphurous acid gas may be collected or used as such; or it may be converted by oxygen and steam (aqueous vapour) into sulphuric acid, as is usually practised in vitriol works, or otherwise treated, while a portion of impure metallic antimony remains in the vessel after the operation has been continued some time, and may be purified for metallic antimony of commerce, or refined for gold, silver, or other metals. *Patent completed.*

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